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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
AND
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Applicant : David Allison Bennett, et al.
Application No. : 09/685,078
Filed : October 6, 2000
Title : APPARATUS, SYSTEMS AND METHODS FOR ONLINE,
MULTI-CARRIER, MULTI-SERVICE PARCEL SHIPPING
MANAGEMENT FEATURING NOTIFICATION SERVICE
OPTION COMPARISON FOR MULTIPLE CARRIERS
Grp./Div. : 3629
Examiner : Jamiesue A. Plucinski
Docket No. : PSTM0010/MRK/STM

APPEAL BRIEF TRANSMITTAL LETTER

Mail Stop Appeal Brief - Patents
Commissioner For Patents
P.O. Box 1450
Alexandria, VA 22313-1450

140 S. Lake Ave., Suite 312
Pasadena, CA 91101
July 21, 2008

Commissioner:

Attached are the following:

1. FY 2008 Fee Transmittal (in duplicate);
2. Check Number 2571 for the amount of ten dollars (\$10) to cover the ten dollar (\$10) difference between the Appeal Brief Fee previously filed for this case and the Appeal Brief Fee applicable as of the date of this filing;
3. Copy of Statement Under 37 C.F.R. §3.73(b) by Real Party in Interest STAMPS.COM INC., as filed with previously filed Appeal Brief;
4. Copy of Statement Under 37 C.F.R. §3.73(b) by Real Party in Interest ISHIP INC., as filed with previously filed Appeal Brief;
5. Appeal Brief, including Claims Appendix, Evidence Appendix and Related Proceedings Appendix, (Total 196 pages); and
6. Return post card.

A Notice of Appeal and Appeal Brief were previously filed for this case.

Subsequently, an Office Action dated February 20, 2008, issued, reopening prosecution and providing for initiating a new appeal. See, e.g., MPEP §1207.04. In accordance with

MPEP §1207.04, a new Notice of Appeal was filed on May 20, 2008 by U.S. Express Mail and the difference in fees for filing the Notice of Appeal has been paid.

In accordance with MPEP §1207.04, a new Appeal Brief is enclosed. Further in accordance with MPEP §1207.04, it is respectfully requested that the previously paid Appeal Brief Fee be applied to the new Appeal Brief filed concurrently herewith. Since filing the original Appeal Brief and associated Appeal Brief Fee, there has been an increase in the Fee of ten (10) dollars; a check including the ten dollar (\$10) difference is enclosed.

It is respectfully submitted that this Appeal Brief is timely filed under 37 C.F.R. §§ 41.37(a)(1), 41.31(a), 41.31(d) and 1.136, because it is filed before the expiration of July 21, 2008, which is the first business day, a Monday, that follows the Section 41.37 two-month period (that ended on July 20, 2008, a Sunday) following the May 20, 2008 filing (by U.S. Express Mail) of the Notice of Appeal.

Even so, the Commissioner is hereby authorized, pursuant to 37 CFR 1.136(a)(3), to treat any concurrent or future reply or correspondence for the above-identified application, requiring a petition for an extension of time for its timely submission, as incorporating a constructive petition for extension of time for the appropriate length of time. The Commissioner is hereby authorized to charge any fees under 37 CFR 1.16 and 1.17, including any required extension fees, which may be required during the **pendency** of this application, to Deposit Account No. 501574. Please show our docket number with any charge or credit to our Deposit Account. **A copy of this letter is enclosed.**

Respectfully submitted,
KHORSANDI PATENT LAW GROUP, ALC

By 
Marilyn R. Khorsandi
Reg. No. 45,744
Customer No. 29524
626/796-2856

MRK/aa
Enclosures

JUL 21 2008

Effective on 12/8/2004.

Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

**FEES TRANSMITTAL
For FY 2008**

 Applicant Claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$ 10.00)

Complete if Known	
Application Number	09/685,078
Filing Date	October 6, 2000
First Named Inventor	David Allison Bennett
Examiner Name	Jamisue A. Plucinski
Art Unit	3629
Attorney Docket No.	PSTM0010/MRK

METHOD OF PAYMENT (check all that apply)
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 Deposit Account Deposit Account Number 501574 Deposit Account Name: Khorsandi Patent Law Group, ALC

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FEE CALCULATION**1. BASIC FILING, SEARCH, AND EXAMINATION FEES**

FILING FEES		SEARCH FEES		EXAMINATION FEES	
	Small or Large Entity		Small or Large Entity		Small or Large Entity

Application Type	Fee (\$)	Fees Paid (\$)				
Utility	310	155	510	255	210	105
Design	210	105	100	50	130	65
Plant	210	105	310	155	160	80
Reissue	310	155	510	255	620	310
Provisional	210	105	0	0	0	0

2. EXCESS CLAIM FEES**Fee Description**

Each claim over 20 or, for Reissues, each claim over 20 and more than in the original patent

Each independent claim over 3 or, for Reissues, each independent claim more than in the original patent

Multiple dependent claims

Total Claims	Extra Claims	Fee (\$)	Fee Paid (\$)	Multiple Dependent Claims	Fee (\$)	Fee Paid (\$)
- or HP =	x \$0.00	= \$0.00		\$0.00		
HP = highest number of total claims paid for, if greater than 20						

Indep. Claims	Extra Claims	Fee (\$)	Fee Paid (\$)
- or HP =	x \$0.00	= \$0.00	

HP = highest number of independent claims paid for, if greater than 3			
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
AND
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Applicant(s): David Allison Bennett, et al.	Technology Center: 3800
Serial No.: 09/685,078	Group Art Unit: 3829
Filed: October 8, 2000	Examiner: Plucienski, Jamisue A.
Title: APPARATUS, SYSTEMS AND METHODS FOR ONLINE, MULTI-CARRIER, MULTI-SERVICE PARCEL SHIPPING MANAGEMENT FEATURING NOTIFICATION SERVICE OPTION COMPARISON FOR MULTIPLE CARRIERS	
Attorney Docket No.: PSTM0010/MRK	

STATEMENT UNDER 37 C.F.R. §3.73(b)

STAMPS.COM INC. is the owner of an undivided whole interest in common with ISHIP INC. in the instant application. Documentary evidence of the chain of title in accordance with 37 C.F.R. 3.73 (b)(1)(ii) is recorded: 1.) in an Assignment of the entire right, title and interest from the inventors named in the instant application to STAMPS.COM INC. as recorded by the Assignment Division of the United States Patent and Trademark Office on March 13, 2001 on Reel No. 011629 and Frame No. 0798 and 2.) in a subsequent Intellectual Property Joint Ownership Agreement Notice of Assignment identifying both STAMPS.COM INC. and ISHIP INC. as Assignees of an undivided whole interest in common in all rights title and interest in and to the instant application as recorded by the Assignment Division of the United States Patent and Trademark Office on March 26, 2004 on Reel No. 014486 and Frame No. 0275.

The undersigned is empowered to act on behalf of STAMPS.COM INC.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

KPM
Signature

Ken McBride
Typed or printed name

310-482-5801
Telephone Number

11-20-07
Date

CEO
Title



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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
AND
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

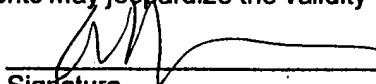
Applicant(s):	David Allison Bennett, et al.	Technology Center:	3600
Serial No.:	09/685,078	Group Art Unit:	3629
Filed:	October 6, 2000	Examiner:	Plucinski, Jamisue A.
Title:	APPARATUS, SYSTEMS AND METHODS FOR ONLINE, MULTI-CARRIER, MULTI-SERVICE PARCEL SHIPPING MANAGEMENT FEATURING NOTIFICATION SERVICE OPTION COMPARISON FOR MULTIPLE CARRIERS		
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Signature

W Tim Davis
Typed or printed name

(425) 602-4848
Telephone Number

8/29/2007
Date

Vice President
Title



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Respectfully submitted,

KHORSANDI PATENT LAW GROUP, ALC

By


Marilyn R. Khorsandi
Reg. No. 45,744
Customer No. 29524
626/796-2856

MRK/aa
Enclosures

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U.S. PATENT & TRADEMARK OFFICE

Effective on 12/8/2004.
Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

FEE TRANSMITTAL For FY 2008

<input type="checkbox"/> Applicant Claims small entity status. See 37 CFR 1.27	Art Unit	3629
TOTAL AMOUNT OF PAYMENT (\$ 10.00)	Attorney Docket No.	PSTM0010/MRK

METHOD OF PAYMENT (check all that apply)

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Deposit Account Deposit Account Number: 501574 Deposit Account Name: Khorsandi Patent Law Group, ALC

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

Charge fee(s) indicated below Charges fee(s) indicated below, except for the filing fee

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FEE CALCULATION**1. BASIC FILING, SEARCH, AND EXAMINATION FEES**

FILING FEES SEARCH FEES EXAMINATION FEES

Application Type	Small or Large Entity		Small or Large Entity		Small or Large Entity		Fees Paid (\$)
	Fee (\$)	Fee (\$)	Fee (\$)	Fee (\$)	Fee (\$)	Fee (\$)	
Utility	310	155	510	255	210	105	\$.00
Design	210	105	100	50	130	65	
Plant	210	105	310	155	160	80	
Reissue	310	155	510	255	620	310	
Provisional	210	105	0	0	0	0	

2. EXCESS CLAIM FEES**Fee Description**

Each claim over 20 or, for Reissues, each claim over 20 and more than in the original patent

Small or Large Entity	Fee (\$)	Fee (\$)
	50	25
	210	105
	370	185

Each independent claim over 3 or, for Reissues, each independent claim more than in the original patent

Multiple dependent claims

Total Claims	Extra Claims	Fee (\$)	Fee Paid (\$)	Multiple Dependent Claims	Fee (\$)	Fee Paid (\$)
- or HP =	x \$.00	= \$ 0.00			\$ 0.00	

HP = highest number of total claims paid for, if greater than 20

Indep. Claims	Extra Claims	Fee (\$)	Fee Paid (\$)
- or HP =	x \$.00	= \$ 0.00	

HP = highest number of independent claims paid for, if greater than 3

3. APPLICATION SIZE FEEIf the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity)
for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41 (a)(1)(G) and 37 CFR 1.16(s).

Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee (\$)	Fee Paid (\$)
- 100 =	0 / 50 =	0 (round up to a whole number)	x \$260.00	= \$ 0.00

4. OTHER FEE(S)

Non-English Specification, \$130 fee (no small entity discount)

Other: Ten Dollar (\$10) difference for filing Appeal Brief

\$10.00

SUBMITTED BY

Signature		Registration No. 45744 (Attorney/Agent)	Telephone (626) 796-2856
Name (Print/Type)	Marilyn R. Khorsandi		
	Date <i>July 21, 2008</i>		



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Technology Center : 3600
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Examiner : Plucinski, Jamisue A.
Docket No. : PSTM0010/MRK

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

140 S. Lake Ave., Suite 312
Pasadena, CA 91101-4710
July 21, 2008

APPEAL BRIEF

This is an appeal of an Office Action, dated February 20, 2008, ("Office Action") a non-final rejection of all claims currently under examination in the case, namely Claims 1-6, 28-33, 49-52, and 58.

An Appeal and an Appeal Brief were previously filed in this case.

Prior to any decision by the Board in that Appeal, in the February 20, 2008 Office Action, prosecution of the application was reopened; Applicants were given the option of filing a reply to the Office Action under 37 C.F.R. §1.111, or initiating a new appeal by filing a Notice of Appeal under 37 C.F.R. §41.31 followed by an Appeal Brief under 37 C.F.R. §41.37, and applying the previously paid Notice of Appeal and Appeal Brief fees. Office Action, p. 2.

Further to the options provided in the Office Action, Applicants filed the Notice of Appeal on May 20, 2008 under 37 C.F.R. §41.31(a) with U.S. Express Mail, all claims having been twice rejected, and in accordance with MPEP §1207.04; in accordance with MPEP §1207.04, Applicants requested that the previously paid Notice of Appeal

07/23/2008 CNGUYEN2 00000075 09685078
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Fee be applied to the new Notice of Appeal filed on October 29, 2007. Since filing the original Notice of Appeal and the May 20, 2008 Notice of Appeal, there had been an increase of ten (10) dollars in the fee; a debit to the Deposit Account for the Attorney of record for the amount of the ten (10) dollar difference between the originally paid Notice of Appeal fee and the new Notice of Appeal fee has been charged by the Patent Office for the filing of the May 20, 2008 Notice of Appeal.

In accordance with MPEP §1207.04, Applicants request that the previously paid Appeal Brief Fee be applied to this new Appeal Brief. Since filing the original Appeal Brief, there has been an increase of ten (10) dollars in the fee; a check including the amount of the ten (10) dollar difference between the originally paid Appeal Brief fee and the new Appeal Brief fee is filed concurrently herewith.

Under 37 CFR §41.37 and in accordance with MPEP §1205.01, the two-month period in which an Appeal Brief may be filed without extension ends on July 20, 2008, a Sunday. It is respectfully submitted that this Appeal Brief is timely filed within the two-month period of time because it is filed before the expiration of July 21, 2008, a Monday, and the first business day following the July 20, 2008 Sunday date; no extension fee is needed.

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<u>InterShipper for Displaying a Simultaneous Identification of Shipping Charges for Shipping the Particular Parcel for Each Delivery Service Offered by Each Respective Carrier of the Plurality of Carriers That Would Provide the Requested Delivery Notification Service For the Particular Parcel (37 C.F.R. §41.37(c)(1)(vii) subheading)</u>	34
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REAL PARTIES IN INTEREST (37 C.F.R. §41.37(c)(1)(i) heading)

In an Assignment, Inventors David Allison Bennett, Scott Meyer, Paul Bilibin, Jinyue Liu, and Gary Rhoe Ingram, assigned the entire right, title and interest in and to the instant application to STAMPS.COM INC., as recorded by the Assignment Division of the United States Patent and Trademark Office on March 13, 2001 on Reel No. 011629 and Frame No. 0799. In a subsequent Intellectual Property Joint Ownership Agreement Notice of Assignment, STAMPS.COM INC. noticed the assignment of an undivided whole interest in common in all rights, title, and interest in and to the present application to both STAMPS.COM INC. and ISHIP INC., as recorded by the Assignment Division of the United States Patent and Trademark Office on March 26, 2004 on Reel No. 014466 and Frame No. 0275. Statements by both STAMPS.COM INC. and ISHIP INC. under 37 C.F.R. §3.73(b) are filed concurrently herewith.

- ISHIP INC. is a fully owned subsidiary of UNITED PARCEL SERVICE OF AMERICA, INC., which is a fully owned subsidiary of UNITED PARCEL SERVICE, INC.

Accordingly, STAMPS.COM INC., ISHIP INC., UNITED PARCEL SERVICE OF AMERICA, INC., and UNITED PARCEL SERVICE, INC. are the real parties in interest in this case.

RELATED APPEALS AND INTERFERENCES (37 C.F.R. §41.37(c)(1)(ii) heading)

Applicants previously presented the current claim set to the Board in an Appeal Brief filed on November 21, 2007. As mentioned above, in an Office Action dated February 20, 2008, prosecution of the application was reopened prior to consideration by the Board of the previously filed Appeal; Applicants were given the option of filing a reply to the Office Action under 37 C.F.R. §1.111 or initiating a new appeal by filing a Notice of Appeal under 37 C.F.R. §41.31 followed by an Appeal Brief under 37 C.F.R. §41.37. Office Action, p. 2. Applicants file this new Appeal.

An Appeal was filed in the case of related co-pending U.S. Patent Application No. 09/684,871 (Applicants David Allison Bennett, et al., Filed October 6, 2000; Entitled "Apparatus, Systems And Methods For Online, Multi-Carrier, Multi-Service Parcel

Shipping Management Featuring Shipping Location Comparison Across Multiple Carriers"; Attorney Docket No. PSTM0003/MRK; Technology Center 3600; Group/Div. 3629; Examiner Jamisue A. Plucinski). An Office Action, dated July 27, 2007, reopened prosecution of the application. Subsequently, another Notice of Appeal, Appeal Brief and Reply Brief have been filed for the application.

Further, there is an Appeal pending in the case of related U.S. Patent Application No. 09/680,654 (Applicants David Allison Bennett, et al., Filed October 6, 2000; Entitled "Apparatus, Systems and Methods for Online, Multi-Carrier, Multi-Service Parcel Shipping Management Featuring Shipping Rate and Delivery Schedule Comparison for Multiple Carriers"; Attorney Docket No. PSTM0015/MRK; Technology Center 3600; Group/Div. 3629; Examiner Jamisue A. Plucinski). No opinion has yet been rendered in that case.

Yet further, there is an Appeal pending in the case of related U.S. Patent Application No. 09/685,077 (Applicants Paul Bilibin, et al., Filed October 6, 2000; Entitled "Apparatus, Systems and Methods for Online, Multi-Carrier, Multi-Service Parcel Shipping Management Determination of Ratable Weight for Multiple Carriers"; Attorney Docket No. PSTM0020/MRK; Technology Center 3600; Group/Div. 3629; Examiner Jamisue A. Plucinski). No opinion has yet been rendered in that case.

Still further, there is an Appeal pending in the case of related U.S. Patent Application No. 09/684,861 (Applicants Bilibin, Paul et al.; Filed October 6, 2000; Entitled "Apparatus, Systems and Methods for Determining Delivery Time Schedules for Each of Multiple Carriers"; Attorney Docket No. PSTM0024/MRK; Technology Center 3600; Group/Div. 3623; Examiner Beth Van Doren). No opinion has yet been rendered in that case.

Further still, there an Appeal was filed in the case of related U.S. Patent Application No. 09/684,866 (Applicants David Allison Bennett, et al., Filed October 6, 2000; Entitled: "Apparatus, Systems and Methods For Online, Multi-Carrier, Multi-Service Parcel Shipping Management"; Attorney Docket No. PSTM0038/MRK; Technology Center 3600; Group/Div. 3629; Examiner Jamisue A. Plucinski).

Subsequent to filing an Appeal Brief for that case, an Office Action, dated March 6, 2008, reopened prosecution of that case.

Further still, there is an Appeal pending in the related case of U.S. Patent Application No. 09/820,377 (Applicants Daniel F. Williams, et al., Filed March 27, 2001; Entitled "Apparatus, Systems and Methods for Online, Multi-Parcel, Multi-Carrier, Multi-Service Enterprise Parcel Shipping Management"; Attorney Docket No. PSTM0041/MRK; Technology Center 3600; Group/Div. 3629; Examiner Jamisue A. Plucinski). No opinion has yet been rendered in that case.

Prior to filing an Appeal in the case of related co-pending U.S. Patent Application No. 09/684,871 (Attorney Docket No. PSTM0003/MRK), a Pre-Appeal Brief Request for Review was filed for that application. A copy of the Notice of Panel Decision from Pre-Appeal Brief Request for Review for Application No. 09/684,871 is included in the Related Proceedings Appendix hereto.

Further, prior to filing an Appeal in the present case for Application No. 09/685,078 (PSTM0010/MRK), a Pre-Appeal Brief Request for Review was filed for that application. A copy of the Notice of Panel Decision from Pre-Appeal Brief Review for Application No. 09/685,078 is included in the Related Proceedings Appendix hereto.

Yet further, prior to filing an Appeal Brief in the case of the above-mentioned Appeal for Application No. 09/680,654 (Attorney Docket No. PSTM0015/MRK), a Pre-Appeal Brief Request for Review was filed for that application. A copy of the Notice of Panel Decision from Pre-Appeal Brief Review for Application No. 09/680,654 is included in the Related Proceedings Appendix hereto.

Still further, prior to filing an Appeal Brief in the case of the above-mentioned Appeal for Application No. 09/685,077 (PSTM0020/MRK), a Pre-Appeal Brief Request for Review was filed for that application. A copy of the Notice of Panel Decision from Pre-Appeal Brief Review for Application No. 09/685,077 is included in the Related Proceedings Appendix hereto.

Further still, prior to filing an Appeal Brief in the case of the above-mentioned pending Appeal for Application No. 09/684,861 (Attorney Docket No. PSTM0024/MRK),

a Pre-Appeal Brief Request for Review was filed for that application. A copy of the Notice of Panel Decision from Pre-Appeal Brief Request for Review for Application No. 09/684,861 is included in the Related Proceedings Appendix hereto.

STATUS OF CLAIMS (37 C.F.R. §41.37(c)(1)(iii) heading)

The present application was filed on October 6, 2000, claiming priority under 37 C.F.R. §1.78(a)(4) to: U.S. Provisional Patent Application Serial No. 60/158,179, filed on October 6, 1999; U.S. Provisional Patent Application Serial No. 60/170,186, filed on December 10, 1999; U.S. Provisional Patent Application Serial No. 60/170,504, filed on December 13, 1999; U.S. Provisional Patent Application Serial No. 60/192,692, filed on March 28, 2000; U.S. Provisional Patent Application Serial No. 60/192,723, filed on March 27, 2000; U.S. Provisional Patent Application Serial No. 60/193,899, filed on March 31, 2000; and U.S. Provisional Patent Application Serial No. 60/195,748, filed on April 6, 2000.

The status of the Claims is as follows:

Allowed Claims: None.

Cancelled Claims: 7-27, 34-48 and 53-57.

Withdrawn Claims: 59-65.

Claims objected to: None.

Rejected Claims: 1-6, 28-33, 49-52, and 58.

Claims on Appeal: 1-6, 28-33, 49-52, and 58.

STATUS OF AMENDMENTS (37 C.F.R. §41.37(c)(1)(iv) heading)

No amendments subsequent to the final Office Action, dated May 21, 2007 or the Office Action dated February 20, 2008, have been filed.

SUMMARY OF CLAIMED SUBJECT MATTER (37 C.F.R. §41.37(c)(1)(v) heading)

The Claims on Appeal are Claims 1-6, 28-33, 49-52, and 58. Of the Claims on appeal, Claims 1, 28, 49, 50, 51, 52 and 58 are independent. It is respectfully submitted that none of the Claims on appeal are means plus function claims.

In compliance with 37 C.F.R. § 41.37(c)(1)(v), the subject matter of the independent claims on appeal is explained below with citations to the Specification of the present application ("Specification") as disclosed with respect to exemplary embodiments. Unless otherwise specified, citations below to the Specification are to page and line numbers of the application as originally filed.

Claims 1, 28, 49 and 50

Claims 1 and 49 are directed to server-based shipping management computer systems that comprise at least one server computer device. Claims 28 and 50 are directed to server-based shipping management computer systems comprising at least one computer device.

It is respectfully submitted that various exemplary embodiments of the aforementioned recitations of Claims 1, 28, 49 and 50 are described in the Specification. See, e.g., Specification, Title; Specification, Abstract; Specification, p. 18, lines 17-23 (describing FIG. 4).

Claim 1 further recites that the shipping management computer system is programmed to, among other things, "... receive from a particular user client computer device of a plurality of user client computer devices, a request input by a user for an electronic mail delivery notification service by a carrier system for shipping a particular parcel and an input by the user of parcel specifications for the particular parcel...."

It is respectfully submitted that various exemplary embodiments of the aforementioned recitations of Claim 1 are described in the Specification. See, e.g., Specification, p. 3, lines 12-23; Specification, p. 37, line 22-p. 38, line 2; Specification, p. 38, lines 16-23.

Claims 28, 49 and 50 recite similar limitations. Claim 28 recites "...receive from

a particular user client computer devices of a plurality of user client computer devices, a request input by a user for a verbal delivery notification service by a carrier for shipping a particular parcel and an input by the user of parcel specifications for the particular parcel”

It is respectfully submitted that various exemplary embodiments of the aforementioned recitations of Claim 28 are described in the Specification. See, e.g., Specification, p. 3, lines 12-23; Specification, p. 37, line 22 - p. 38, line 2; Specification, p. 38, line 24 – p. 39, line 1.

Claim 49 recites “...receive from a particular user client computer device of a plurality of user client computer devices, a request input by a user for a plurality of delivery notification service options for shipping a particular parcel and an input by the user of parcel specifications for the particular parcel”

It is respectfully submitted that various exemplary embodiments of the aforementioned recitations of Claim 49 are described in the Specification. See, e.g., Specification, p. 3, lines 12-23; Specification, p. 37, line 22 - p. 38, line 2; Specification, p. 38, lines 16-23; Specification, p. 38, line 24 – p. 39, line 1.

Claim 50 recites “...receive from an at least one respective user of a plurality of users, a respective request for an at least one delivery notification service option of a plurality of delivery notification service options for shipping a respective particular parcel”

It is respectfully submitted that various exemplary embodiments of the aforementioned recitations of Claim 50 are described in the Specification. See, e.g., Specification, p. 3, lines 12-23; Specification, p. 37, line 22 - p. 38, line 2; Specification, p. 38, lines 16-23; Specification, p. 38, line 24 – p. 39, line 1.

Claim 1 further recites that “...for each respective carrier of a plurality of carriers, determine whether the respective carrier would provide electronic mail delivery notification for shipping the particular parcel according to the request” Claims 28, 49 and 50 recite similar limitations regarding verbal delivery notification and delivery notification options.

It is respectfully submitted that various exemplary embodiments of the aforementioned recitations of Claims 1, 28, 49 and 50 are described in the Specification. See, e.g., Specification, p. 64, lines 18-27; Specification, p. 64, line 28 – p. 65, line 9; Specification, p. 54, line 27 – p. 55, line 6; Specification, p. 56, lines 21-28; Specification, p. 58, line 22 – p. 59, line 8.

Claim 1 further recites that "...for each respective carrier of the plurality of carriers that would provide electronic mail delivery notification for shipping the particular parcel according to the request, display to a display device configured for communication with the particular user client computer device of the user, as to the particular parcel, a simultaneous identification of shipping charges for each delivery service offered by the respective carrier to ship the particular parcel according to the parcel shipping specifications." Claims 28, 49 and 50 recite similar limitations regarding verbal delivery notification and delivery notification options.

It is respectfully submitted that various exemplary embodiments of the aforementioned recitations of Claims 1, 28, 49 and 50 are described in the Specification. See, e.g., FIG. 40 and corresponding description at Specification, p. 66, lines 22-24; FIG. 36a and corresponding description at Specification, p. 47, line 28 – p. 54, line 18; FIG. 36f and corresponding description at Specification, p. 55, line 26 – p. 57, line 10.

Claims 51 and 52

Claim 51 is directed to a shipping management computer system comprising at least one computer device. Claim 52 is directed to a method using a computer system for managing shipping of a plurality of parcels shipped by any one of a plurality of carriers, wherein said computer system comprises at least one computer device.

It is respectfully submitted that various exemplary embodiments of the aforementioned recitations of Claims 51 and 52 are described in the Specification. See, e.g., Specification, Title; Specification, Abstract; Specification, p. 18, lines 17-23 (describing FIG. 4).

Claim 51 further recites that the shipping management computer system is programmed to, among other things, "... simultaneously identify to a respective user of a plurality of users, in response to the respective user's request for at least one delivery notification service option of a plurality of delivery notification service options for shipping a respective parcel, each delivery service offered by each respective carrier of a plurality of carriers that would support each delivery notification service option requested by the respective user for delivery of the respective parcel."

Claim 52 similarly recites that the claimed method comprises "... displaying to a respective user of a plurality of users, in response to the respective user's request for at least one delivery notification service option of a plurality of delivery notification service options for shipping a respective parcel, a simultaneous identification of each delivery service offered by each respective carrier of a plurality of carriers that would provide the delivery notification service options requested by the respective user for shipping the respective parcel."

It is respectfully submitted that various exemplary embodiments of the aforementioned recitations of Claims 51 and 52 are described in the Specification. See, e.g., Specification, p. 3, lines 12-23; Specification, p. 37, line 22 - p. 38, line 2; Specification, p. 38, lines 16-23; Specification, p. 38, line 24 – p. 39, line 1. See also, e.g., Specification, p. 64, lines 18-27; Specification, p. 64, line 28 – p. 65, line 9; FIG. 40 and corresponding description at Specification, p. 66, lines 22-24; FIG. 36a and corresponding description at Specification, p. 47, line 28 – p. 54, line 18; FIG. 36f and corresponding description at Specification, p. 55, line 26 – p. 57, line 10; Specification, p. 54, line 27 – p. 55, line 6; Specification, p. 58, line 22 – p. 59, line 8.

Claim 58

Claim 58 is directed to a shipping management computer system.

It is respectfully submitted that various exemplary embodiments of the aforementioned recitations of Claim 58 are described in the Specification. See, e.g., Specification, Title; Specification, Abstract; Specification, p. 18, lines 17-23 (describing

FIG. 4).

Claim 58 recites "... allowing a user to select, via a notification option selection, an electronic mail delivery notification option to be offered in conjunction with a delivery of a parcel ... [and] ... receiving said notification option selection from said user ..."

It is respectfully submitted that various exemplary embodiments of the aforementioned recitations of Claim 58 are described in the Specification. See, e.g., Specification, p. 3, lines 12-23; Specification, p. 37, line 22-p. 38, line 2; Specification, p. 38, lines 16-23.

Claim 58 further recites "... in response to receiving said notification option selection ... identifying, from a plurality of carriers, a first carrier that would offer an electronic mail delivery notification service in conjunction with performing said delivery of the parcel, and ... identifying, from said plurality of carriers, a second carrier that would offer an electronic mail delivery notification service in conjunction with performing said delivery of the parcel"

It is respectfully submitted that various exemplary embodiments of the aforementioned recitations of Claim 58 are described in the Specification. See, e.g., Specification, p. 64, lines 18-27; Specification, p. 64, line 28 – p. 65, line 9; Specification, p. 54, line 27 – p. 55, line 6; Specification, p. 56, lines 21-28; Specification, p. 58, line 22 – p. 59, line 8.

Claim 58 further recites "...for each delivery service offered by said first carrier, using a first set of electronic mail delivery notification rules defined by said first carrier for the respective delivery service to calculate a respective service-specific service charge that said first carrier would charge for providing an electronic mail delivery notification service in conjunction with performing said delivery of the parcel according to the respective delivery service ... [and] ... for each delivery service offered by said second carrier, using a second set of electronic mail delivery notification rules defined by said second carrier for the respective delivery service to calculate a respective service-specific service charge that said second carrier would charge for providing an electronic mail delivery notification service in conjunction with performing said delivery

of the parcel according to the respective delivery service"

It is respectfully submitted that various exemplary embodiments of the aforementioned recitations of Claim 58 are described in the Specification. See, e.g., Specification, p. 64, lines 18-27; Specification, p. 64, line 28 – p. 65, line 9; Specification, p. 54, line 27 – p. 55, line 6; Specification, p. 56, lines 21-28; Specification, p. 58, line 22 – p. 59, line 8.

Claim 58 further recites "... simultaneously displaying on a display screen associated with said user: ... a first respective service-specific shipping charge that said first carrier would charge in conjunction with performing said delivery of the parcel according to a first respective delivery service offered by said first carrier, said first respective service-specific shipping charge calculated to include a first respective service-specific service charge associated with the first respective delivery service providing an electronic mail delivery notification for the delivery of the parcel, ... a second respective service-specific shipping charge that said first carrier would charge in conjunction with performing said delivery of the parcel according to a second respective delivery service offered by said first carrier, said second respective service-specific shipping charge calculated to include a second respective service-specific service charge associated with the second respective delivery service providing an electronic mail delivery notification for the delivery of the parcel, ... a third respective service-specific shipping charge that said second carrier would charge in conjunction with performing said delivery of the parcel according to a third respective delivery service offered by the second carrier, said third respective service-specific shipping charge calculated to include a third respective service-specific service charge associated with the third respective delivery service providing an electronic mail delivery notification for the delivery of the parcel, and ... a fourth respective service-specific shipping charge that said second carrier would charge in conjunction with performing said delivery of the parcel according to a fourth respective delivery service offered by said second carrier, said fourth respective service-specific shipping charge calculated to include a fourth respective service-specific service charge associated with the fourth respective delivery

service providing an electronic mail delivery notification for the delivery of the parcel."

It is respectfully submitted that various exemplary embodiments of the aforementioned recitations of Claim 58 are described in the Specification. See, e.g., FIG. 40 and corresponding description at Specification, p. 66, lines 22-24; FIG. 36a and corresponding description at Specification, p. 47, line 28 – p. 54, line 18; FIG. 36f and corresponding description at Specification, p. 55, line 26 – p. 57, line 10.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL (37 C.F.R.

§41.37(c)(1)(vi) heading)

In the Office Action, Claims 1-6, 49-52 and 58 were rejected under 35 U.S.C. §103(a) as being unpatentable over Nicholls et al. (U.S. Patent No. 5,485,369; "Nicholls") in view of Fisher et al. (U.S. Patent No. 6,047,264; "Fisher"), Kara et al. (U.S. Patent No. 6,233,568; "Kara") and InterShipper (Newsbytes Article, February 18, 1998, "Internet Update"; "Intershipper"). Office Action, Topic Nos. 3-10, pgs. 3-5.

In the Office Action, Claims 28-33 were rejected under 35 U.S.C. §103(a) as being unpatentable over Nicholls in view of Pauly et al. (U.S. Patent No. 4,958,280; "Pauly"), Kara and Intershipper. Office Action, Topic Nos. 11-18, pgs. 5-7.

For convenient reference, copies of Nicholls, Kara, InterShipper, Fisher and Pauly are included in the Evidence Appendix hereto.

Issue 1 Regarding the Rejection of Independent Claims 49, 50, 51, and 52, Under 35 U.S.C. §103(a) as Unpatentable over Nicholls in View of Fisher, Kara and InterShipper on the Grounds that the Combination of Nicholls, Fisher, Kara and InterShipper Render as Obvious the Limitations of the Claims for Determining/Identifying Carriers That Would Provide the Requested Delivery Notification Service(s) for Shipping a Particular Parcel

Issue 2 Regarding the Rejection of Independent Claims 1 and 58, and Dependent Claims 2-6, Under 35 U.S.C. §103(a) as Unpatentable over Nicholls in View of Fisher, Kara and InterShipper on the Grounds that the Combination of Nicholls, Fisher, Kara and InterShipper Render as Obvious the Limitations of the Claims for Determining/Identifying Carriers That Would Provide the Requested Type of Delivery Notification Services for Shipping a Particular Parcel

Issue 3 Regarding the Rejection of Independent Claims 1, 49, 50, 51, 52, and 58, and Dependent Claims 2-6, Under 35 U.S.C. §103(a) as Unpatentable over Nicholls in View of Fisher, Kara and InterShipper on the Grounds that the Combination of Nicholls, Fisher, Kara and InterShipper Render as Obvious the Limitations of the Claims for Displaying a Simultaneous Identification of Shipping Charges for Shipping the Particular Parcel for Each Delivery Service Offered by Each Respective Carrier of the Plurality of Carriers That Would Provide the Requested Delivery Notification Service According to the Request

Issue 4 Regarding the Rejection of Independent Claim 28, and Dependent Claims 29-33, Under 35 U.S.C. §103(a) as Unpatentable over Nicholls in View of Pauly, Kara and InterShipper on the Grounds that the Combination of Nicholls, Pauly, Kara and InterShipper Render as Obvious the Limitations of Claim 28 for Determining Carriers That Would Provide Verbal Delivery Notification for Shipping a Particular Parcel

Issue 5 Regarding the Rejection of Independent Claim 28, and Dependent Claims 20-33, Under 35 U.S.C. §103(a) as Unpatentable over Nicholls in View of Pauly, Kara and InterShipper on the Grounds that the Combination of Nicholls, Pauly, Kara and InterShipper Render as Obvious the Limitations of the Claims for Displaying a Simultaneous Identification of Shipping Charges for Shipping the Particular Parcel for Each Delivery Service Offered by Each Respective Carrier of the Plurality of Carriers That Would Provide the Requested Verbal Delivery Notification Service

ARGUMENT (37 C.F.R. §41.37(c)(1)(vii) heading)

Issue 1 Argument Regarding the Rejection of Independent Claims 49, 50, 51, and 52 Under 35 U.S.C. §103(a) as Unpatentable over Nicholls in View of Fisher, Kara and InterShipper on the Grounds that the Combination of Nicholls, Fisher, Kara and InterShipper Render as Obvious the Limitations of the Claims for Determining/Identifying Carriers That Would Provide the Requested Delivery Notification Service(s) for Shipping a Particular Parcel: There is No Disclosure in Nicholls, Fisher, Kara or InterShipper of Determining/Identifying Carriers That Would Provide the Requested Delivery Notification Service(s) for Shipping a Particular Parcel (37 C.F.R. §41.37(c)(1)(vii) subheading)

For the reasons given and the authorities cited below, it is respectfully asserted that Claims 49-52 are patentably distinguished from the references of record. It is therefore respectfully requested that the rejection of Claims 49-52 be reversed and that those Claims be allowed. In particular, it is respectfully asserted that none of the references of record, whether considered alone or in combination, disclose, anticipate, teach or suggest all of the limitations recited in independent Claims 49-52 as discussed in detail in the following paragraphs.

It is respectfully asserted that independent Claims 49-52 claim, in one way or another, determining or identifying carriers that would provide one or more delivery notification services for shipping a particular parcel according to a user's request. In particular, Claim 49 claims "... for each respective carrier of a plurality of carriers, determine whether the respective carrier would provide each of the plurality of delivery notification service options [requested by a user] for shipping [a] particular parcel according to the request [by the user]...."

Claim 50 claims "...for each respective carrier of a plurality of carriers, for each respective delivery notification service option of the at least one delivery notification service options [requested by a user], determine whether the respective carrier would provide the respective delivery notification service option for shipping the particular parcel according to the request [by the user]"

Claim 51 claims “....simultaneously identify to a respective user of a plurality of users, in response to the respective user's request for at least one delivery notification service option of a plurality of delivery notification service options for shipping a respective parcel, each delivery service offered by each respective carrier of a plurality of carriers that would support each delivery notification service option requested by the respective user for delivery of the respective parcel.”

Claim 52 claims “...displaying to a respective user of a plurality of users, in response to the respective user's request for at least one delivery notification service option of a plurality of delivery notification service options for shipping a respective parcel, a simultaneous identification of each delivery service offered by each respective carrier of a plurality of carriers that would provide the delivery notification service options requested by the respective user for shipping the respective parcel.”

Further, it is respectfully asserted that Claims 49-52 claim determination/identification of carriers that would provide the requested delivery notification services with respect to a *particular* parcel, as compared to a general request for information. In particular, Claim 49 claims user input of parcel specifications for the parcel to be shipped. Similarly, Claims 50-52 claim that the user requests the delivery notification service with respect to a “respective particular parcel” (Claim 50), or “a respective parcel” (Claims 51 and 52).

The Office Action states that “Nicholls ... fails to disclose determining whether a carrier would provide a specific service....” Office Action, Topic No. 6, p. 4.

In view of the failure of Nicholls to teach determining or identifying carriers that would provide a requested delivery notification service for shipping a particular parcel, as claimed in one way or another by independent Claims 49-52, the Office Action asserts that “Kara discloses a computer program used for multiple shippers that determines if a carrier provides a specific service....” Office Action, Topic No. 6, p. 4 (citing Kara, col. 22, lines 13-48). However, as compared to identifying or determining carrier support for providing a particular special service with respect to a particular parcel as claimed in one way or another by Claims 49-52, the cited portion of Kara

explains that “[t]he E-STAMP program will automatically incorporate the … entered parameters—weight, class, zone—in order to correctly calculate the correct postage … Where a selected shipping service provider does not provide a desired shipping and/or delivery parameter, the E-STAMP program may indicate such and provide the fees for a service offered by that particular shipping service provider most near that desired by the user.” Kara, col. 22, lines 13-38.

Notwithstanding the above-cited assertions by the Office Action, it is respectfully asserted that the above-cited disclosure of Kara does not disclose any facility for user input of an indication of any type of special service of the type claimed. Rather, according to the above-cited disclosure, Kara discloses consideration of “desired shipping and/or delivery parameters” and mentions the “entered parameters” of “weight, class, zone.” See Kara, col. 22, lines 13-38. It is respectfully asserted that basic parcel specifications such as weight, and basic shipping parameters such as class and zone, are distinguished from special services that may, or may not be provided by particular carriers.

Moreover, even if it were assumed for the sake of argument only that Kara’s consideration of basic parcel specifications and basic shipping parameters could be considered to be special service options of the nature of the type claimed, it is respectfully asserted that the above-cited disclosure of Kara fails to disclose, anticipate, teach or suggest identifying or determining, carriers that would provide delivery notification services or options for shipping a *particular parcel (including a respective parcel, or a parcel)*, as claimed in one way or another by Claims 49-52.

The Office Action does not assert that InterShipper discloses, anticipates, teaches or suggests, and it is respectfully asserted that in fact, InterShipper does not disclose, anticipate, teach or suggest, identifying or determining, carriers that would provide delivery notification services or options for shipping a *particular parcel (including a respective parcel, or a parcel)*, as claimed in one way or another by Claims 49-52.

It is therefore respectfully asserted that none of the cited references, including Nicholls, Kara, and InterShipper, disclose that some carriers may provide a particular

special service such as a delivery notification service, and that some carriers may not, with respect to a particular parcel. Moreover, it is respectfully asserted that none of the cited references, including Nicholls, Kara, and InterShipper, disclose identifying or determining whether or not a carrier would provide a particular special service, such as a delivery notification service, with respect to a particular parcel.

As compared to the apparent assumption by some of the references of record that all carriers provide special services, or in the case, for example, of Kara, that if a carrier provides a certain service, that it would do so with respect to all parcels, the Specification of the present application explains:

One of the problems in dealing with standalone Carrier systems is that, if the Shipper wants electronic mail ("e-mail") notification that a particular parcel has been delivered, the Shipper must attempt to apply each Carrier's rules for providing a Shipper with electronic mail notification that a particular parcel has been delivered. *Each Carrier's electronic mail delivery notification pricing rules must be separately applied by the Shipper to shipment of a particular parcel to determine whether or not the particular Carrier offers electronic mail delivery notification and if so, the price for the service.*

Specification, p. 2, lines 19-25 (emphasis added).

For example, as compared to the apparent assumption by some of the references of record that all carriers provide special services, or in the case, for example, of Kara, that if a carrier provides a certain service, that it would do so with respect to all parcels, Claim 49 recites the limitation "...for each respective carrier of a plurality of carriers, *determine whether the respective carrier would provide each of the plurality of delivery notification service options* for shipping the particular parcel according to the request" (Emphasis added).

Similarly, Claim 50 recites the limitation "...for each respective carrier of a plurality of carriers, for each respective delivery notification service option of the at least one delivery notification service options, *determine whether the respective carrier would provide the respective delivery notification service option* for shipping the particular parcel according to the request" (Emphasis added).

Similarly, Claim 51 recites the limitations "...simultaneously identify to a

respective user of a plurality of users, in response to the respective user's request for at least one delivery notification service option of a plurality of delivery notification service options for shipping a respective parcel, *each delivery service offered by each respective carrier of a plurality of carriers that would support each delivery notification service option requested by the respective user for delivery of the respective parcel.*" (Emphasis added).

Similarly, Claim 52 recites the limitations "...displaying to a respective user of a plurality of users, in response to the respective user's request for at least one delivery notification service option of a plurality of delivery notification service options for shipping a respective parcel, a *simultaneous identification* of each delivery service offered by *each respective carrier of a plurality of carriers that would provide the delivery notification service options* requested by the respective user for shipping the respective parcel." (Emphasis added).

It is respectfully asserted that the above-recited limitations by Claims 49-52 are distinguished from the references of record.

Therefore, it is respectfully asserted that none of the references of record disclose, anticipate, teach or suggest identifying or determining which of a plurality of carriers would provide for delivery of a particular parcel, a delivery notification service and which do not, as claimed in one way or another by Claims 49-52.

The Office Action concedes that "Nicholls ... fails to disclose the specific delivery requirements includes an electronic mail delivery notification ..." (Office Action, Topic No. 5, p. 4), but asserts that "Fisher discloses a method for supplying automatic status updates using e-mail (See abstract) ..." and asserts that "[i]t would have been obvious to one having ordinary skill in the art at the time the invention was made to have the proof of delivery of Nicholls be the electronic notification system, as disclosed by Fisher" Office Action, Topic No. 5, p. 4. The Office Action further asserts that the aforementioned combination "... would have been obvious ... in order to automatically send delivery status messages over email without the aid or need of a human customer service representative [citing Fisher, cols. 1 and 2]." Office Action, Topic No. 5, p. 4.

It is respectfully asserted that the aforementioned reasoning in the Office Action misconstrues the claimed limitations. In particular, as compared to the reasoning of the Office Action that it would have been obvious to make the asserted combination “... in order to automatically send delivery status messages over email ...,” it is respectfully submitted that none of Claims 49-52 are directed to supplying, or in any way providing, automatic status updates using email. Rather, Claim 49, for example, recites the limitations to “...receive ... from a particular user client computer device ..., a request input by a user for a plurality of delivery notification service options for shipping a particular parcel and an input by the user of parcel specifications for the particular parcel ...” and then, “...for each respective carrier of the plurality of carriers that would provide each of the plurality of delivery notification service options for shipping the particular parcel ..., display to a display device ..., as to the particular parcel, a simultaneous identification of shipping charges for each delivery service offered by the respective carrier to ship the particular parcel according to the parcel shipping specifications.”

Further still, as compared to the reasoning of the Office Action that it would have been obvious to make the asserted combination “... in order to automatically send delivery status messages over email ...,” it is respectfully asserted that there is no disclosure in *Fisher* of the *Fisher carriers* themselves providing any type of delivery notification. Rather, in *Fisher*, as further explained below, the *Fisher system* interrogates a carrier’s system to determine the status of a customer’s respective shipment; the *Fisher system* then composes an email message to the respective customer regarding the status of the customer’s respective shipment.

Moreover, for the following reasons and authorities, it is respectfully asserted that the combination of *Fisher* with *Nicholls* and the other references of record, adds nothing to support the rejection of Claims 49-52. That is because, as further explained below, the disclosure of *Fisher* is fundamentally different than the limitations of independent Claims 49-52.

Fisher discloses a merchant system that tracks shipment status of a customer’s

order sent by a particular merchant using a particular carrier to the respective ordering customer. *Fisher*, col. 2, lines 12 – 18. According to *Fisher*, the *Fisher* system interrogates the carrier's system to determine the shipping status of the respective order. *Fisher*, col. 2, lines 12 – 18. The *Fisher* system then composes and sends an email notice to the respective ordering customer regarding their respective order shipment status. *Fisher*, col. 2, lines 12 – 18. It is respectfully asserted that there is no disclosure in *Fisher* of the *Fisher* carriers themselves providing any type of delivery notification.

As distinguished from a system such as the one disclosed in *Fisher* that itself composes a shipment status email message based on a carrier-system interrogation, it is respectfully asserted that Claim 49, for example, recites limitations that "...for each respective carrier of a plurality of carriers, *determine whether the respective carrier would provide each of the plurality of delivery notification service options* for shipping the particular parcel according to the request" (Emphasis added).

As further distinguished from a system such as disclosed in *Fisher* that itself composes a shipment status email message based on a carrier-system interrogation, it is respectfully asserted that Claim 49, for example, recites limitations that "... for each respective carrier of the plurality of carriers *that would provide each of the plurality of delivery notification service options for shipping the particular parcel ...*, display to a display device..., as to the particular parcel, a simultaneous identification of shipping charges for each delivery service offered by the respective carrier to ship the particular parcel according to the parcel shipping specifications..." (emphasis added) (See also, similar limitations of Claims 50-52). That is, as compared to the *Fisher* system that itself provides shipment status, Claim 49, for example, is directed to determining which carriers would provide delivery notification service options, and then providing a simultaneous display of shipping charges for various carriers and various delivery services that would provide the delivery notification service options for shipping a particular parcel.

Yet further, it is respectfully asserted that, as distinguished from the *Fisher*

system composition of an email message to a customer, Claim 49, for example, recites “...receiv[ing] ... from a particular user client computer device ..., a request input by a user for a plurality of delivery notification service options for shipping a particular parcel and an input by the user of parcel specifications for the particular parcel ...” and then, “...for each respective carrier of the plurality of carriers that would provide each of the plurality of delivery notification service options for shipping the particular parcel ..., display to a display device ..., as to the particular parcel, a simultaneous identification of shipping charges for each delivery service offered by the respective carrier to ship the particular parcel according to the parcel shipping specifications.”

In view of the above-described distinctions between the disclosures of the cited references on the one hand, and independent Claims 49-52, on the other hand, it is respectfully asserted, for the reasons given above, that none of the cited references, whether considered alone or in combination with any other reference of record, do not anticipate, disclose, teach or suggest all of the limitations of Claims 49-52 of the present application. It is therefore respectfully requested that the rejection of Claims 49-52 be reversed and that those Claims be allowed.

Issue 2 Argument Regarding the Rejection of Independent Claims 1 and 58, and Dependent Claims 2-6, Under 35 U.S.C. §103(a) as Unpatentable over Nicholls in View of Fisher, Kara and InterShipper on the Grounds that the Combination of Nicholls, Fisher, Kara and InterShipper Render as Obvious the Limitations of the Claims for Determining/Identifying Carriers That Would Provide the Requested Type of Delivery Notification Service for Shipping a Particular Parcel: There is No Disclosure in Nicholls, Fisher, Kara or InterShipper of Determining/Identifying Carriers That Would Provide the Requested Type of Delivery Notification Service for Shipping a Particular Parcel (37 C.F.R. §41.37(c)(1)(vii) subheading)

For the reasons given and the authorities cited below, it is respectfully asserted that Claims 1 and 58, and therefore dependent Claims 2-6, are patentably distinguished from the references of record. It is therefore respectfully requested that the rejection of Claims 1 and 58, and therefore dependent Claims 2-6, be reversed and that those

Claims be allowed. In particular, it is respectfully asserted that none of the references of record, whether considered alone or in combination, disclose, anticipate, teach or suggest all of the limitations recited in independent Claims 1 and 58 as discussed in detail in the following paragraphs.

It is respectfully asserted that independent Claims 1 and 58 each claim, in one way or another, determining or identifying carriers that would provide electronic mail delivery notification for shipping a particular parcel according to a user's request. In particular, Claim 1 claims, "for each respective carrier of a plurality of carriers, determine whether the respective carrier would provide electronic mail delivery notification for shipping [a] particular parcel [according to a request input by a user for an electronic mail delivery notification service by a carrier system for shipping the particular parcel]. Claim 58 claims "... identifying, from a plurality of carriers, a first carrier that would offer an electronic mail delivery notification service in conjunction with performing said delivery of the parcel, and ... identifying, from said plurality of carriers, a second carrier that would offer an electronic mail delivery notification service in conjunction with performing said delivery of the parcel."

Further, it is respectfully asserted that Claims 1 and 58 claim determination/identification of carriers that would provide electronic mail delivery notification with respect to a *particular* parcel, as compared to a general request for information. In particular, Claim 1 claims user input of parcel specifications for the parcel to be shipped. Similarly, Claim 58 claims that the user requests electronic mail delivery notification with respect to "a parcel".

The Office Action states that "Nicholls ... fails to disclose determining whether a carrier would provide a specific service...." Office Action, Topic No. 6, p. 4.

In view of the failure of Nicholls to teach determining or identifying carriers that would provide a requested electronic mail delivery notification service for shipping a particular parcel, as claimed in one way or another by independent Claims 1 and 58, the Office Action asserts that "Kara discloses a computer program used for multiple shippers that determines if a carrier provides a specific service...." Office Action, Topic

No. 6, p. 4 (citing Kara, col. 22, lines 13-48). However, as compared to identifying or determining carrier support for providing a particular special service, such as electronic mail delivery notification, with respect to a particular parcel as claimed in one way or another by Claims 1 and 58, and therefore dependent Claims 2-6, the cited portion of Kara explains that “[t]he E-STAMP program will automatically incorporate the ... entered parameters—weight, class, zone—in order to correctly calculate the correct postage ... Where a selected shipping service provider does not provide a desired shipping and/or delivery parameter, the E-STAMP program may indicate such and provide the fees for a service offered by that particular shipping service provider most near that desired by the user.” Kara, col. 22, lines 13-38.

Notwithstanding the above-cited assertions by the Office Action, it is respectfully asserted that the above-cited disclosure of Kara does not disclose any facility for user input of an indication of any type of special service of the type claimed. Rather, according to the above-cited disclosure, Kara discloses consideration of “desired shipping and/or delivery parameters” and mentions the “entered parameters” of “weight, class, zone.” See Kara, col. 22, lines 13-38. It is respectfully asserted that basic parcel specifications such as weight, and basic shipping parameters such as class and zone, are distinguished from special services that may, or may not be provided by particular carriers.

Moreover, even if it were assumed for the sake of argument only that Kara’s consideration of basic parcel specifications and basic shipping parameters could be considered to be special service options of the nature of the type claimed, it is respectfully asserted that the above-cited disclosure of Kara fails to disclose, anticipate, teach or suggest identifying or determining, carriers that would provide electronic mail delivery notification for shipping *a particular parcel, as claimed in one way or another by Claims 1 and 58.*

The Office Action does not assert that InterShipper discloses, anticipates, teaches or suggests, and it is respectfully asserted that in fact, InterShipper does not disclose, anticipate, teach or suggest, identifying or determining, carriers that would

provide electronic mail delivery notification for shipping a *particular parcel* (or a *respective parcel*, or a *parcel*), as claimed in one way or another by Claims 1 and 58.

It is therefore respectfully asserted that none of the cited references, including *Nicholls*, *Kara*, and *InterShipper*, disclose that some carriers may provide a particular special service, such as electronic mail delivery notification, and that some carriers may not, with respect to a particular parcel. Moreover, it is respectfully asserted that none of the cited references, including *Nicholls*, *Kara*, and *InterShipper*, disclose identifying or determining whether or not a carrier would provide a particular special service, such as electronic mail delivery notification, with respect to a particular parcel.

As compared to the apparent assumption by some of the references of record that all carriers provide special services, or in the case, for example, of *Kara*, that if a carrier provides a certain service, that it would do so with respect to all parcels, the Specification of the present application explains:

One of the problems in dealing with standalone Carrier systems is that, if the Shipper wants electronic mail ("e-mail") notification that a particular parcel has been delivered, the Shipper must attempt to apply each Carrier's rules for providing a Shipper with electronic mail notification that a particular parcel has been delivered. *Each Carrier's electronic mail delivery notification pricing rules must be separately applied by the Shipper to shipment of a particular parcel to determine whether or not the particular Carrier offers electronic mail delivery notification and if so, the price for the service.*

Specification, p. 2, lines 19-25 (emphasis added).

For example, as compared to the apparent assumption by some of the references of record that all carriers provide special services, or in the case, for example, of *Kara*, that if a carrier provides a certain service, that it would do so with respect to all parcels, Claim 1 recites the limitations "...for each respective carrier of the plurality of carriers *that would provide electronic mail delivery notification for shipping the particular parcel according to the request*" (Emphasis added).

Similar to the determining limitations of Claims 1, Claim 58 recites the following limitations for identifying carriers that would provide an electronic mail delivery notification service:

(C)in response to receiving said notification option selection:

- (1) identifying, from a plurality of carriers, a first carrier that would offer an electronic mail delivery notification service in conjunction with performing said delivery of the parcel, and
- (2) identifying, from said plurality of carriers, a second carrier that would offer an electronic mail delivery notification service in conjunction with performing said delivery of the parcel;

It is respectfully asserted that the above-recited limitations by Claims 1 and 58, and therefore dependent Claims 2-6 are distinguished from the references of record.

Therefore, it is respectfully asserted that none of the references of record disclose, anticipate, teach or suggest identifying or determining which of a plurality of carriers would provide for delivery of a particular parcel, a delivery notification service and which do not, as claimed in one way or another by Claims 1 and 58, and therefore dependent Claims 2-6.

The Office Action concedes that "Nicholls ... fails to disclose the specific delivery requirements includes an electronic mail delivery notification ..." (Office Action, Topic No. 5, p. 4), but asserts that "Fisher discloses a method for supplying automatic status updates using e-mail (See abstract) ..." and asserts that "[i]t would have been obvious to one having ordinary skill in the art at the time the invention was made to have the proof of delivery of Nicholls be the electronic notification system, as disclosed by Fisher" Office Action, Topic No. 5, p. 4. The Office Action further asserts that the aforementioned combination "... would have been obvious ... in order to automatically send delivery status messages over email without the aid or need of a human customer service representative [citing Fisher, cols. 1 and 2]." Office Action, Topic No. 5, p. 4.

It is respectfully asserted that the aforementioned reasoning in the Office Action misconstrues the claimed limitations. In particular, as compared to the reasoning of the Office Action that it would have been obvious to make the asserted combination "... in order to automatically send delivery status messages over email ...," it is respectfully submitted that none of Claims 1-6, and 58 are directed to supplying, or in any way providing, automatic status updates using email. Rather, Claim 1, for example, recites

the limitations to "...receive ... a request input by a user for an electronic mail delivery notification service by a carrier system for shipping a particular parcel ..." and then, "... for each respective carrier of the plurality of carriers that would provide electronic mail delivery notification for shipping the particular parcel according to the request, display ... a simultaneous identification of shipping charges for each delivery service offered by the respective carrier to ship the particular parcel according to the parcel shipping specifications."

Further still, as compared to the reasoning of the Office Action that it would have been obvious to make the asserted combination "... in order to automatically send delivery status messages over email ...," it is respectfully asserted that there is no disclosure in *Fisher* of the *Fisher carriers* themselves providing any type of delivery notification. Rather, in *Fisher*, as further explained below, the *Fisher system* interrogates a carrier's system to determine the status of a customer's respective shipment; the *Fisher system* then composes an email message to the respective customer regarding the status of the customer's respective shipment.

Moreover, for the following reasons and authorities, it is respectfully asserted that the combination of *Fisher* with *Nicholls* and the other references of record, adds nothing to support the rejection of Claims 1-6, and 58. That is because, as further explained below, the disclosure of *Fisher* is fundamentally different than the limitations of independent Claims 1 and 58, and their respective dependent Claims 2-6.

Fisher discloses a merchant system that tracks shipment status of a customer's order sent by a particular merchant using a particular carrier to the respective ordering customer. *Fisher*, col. 2, lines 12 – 18. According to *Fisher*, the *Fisher system* interrogates the carrier's system to determine the shipping status of the respective order. *Fisher*, col. 2, lines 12 – 18. The *Fisher system* then composes and sends an email notice to the respective ordering customer regarding their respective order shipment status. *Fisher*, col. 2, lines 12 – 18. It is respectfully asserted that there is no disclosure in *Fisher* of the *Fisher carriers* themselves providing any type of delivery notification.

As distinguished from a system such as the one disclosed in *Fisher* that itself composes a shipment status email message based on a carrier-system interrogation, it is respectfully asserted that Claim 1, for example, recites limitations that "...for each respective carrier of a plurality of carriers, *determine whether the respective carrier would provide electronic mail delivery notification* for shipping the particular parcel according to the request." (Emphasis added).

As further distinguished from a system such as disclosed in *Fisher* that itself composes a shipment status email message based on a carrier-system interrogation, it is respectfully asserted that Claim 1, for example, recites limitations that "... for each respective carrier of the plurality of carriers that would provide electronic mail delivery notification for shipping the particular parcel ... display ... a simultaneous identification of *shipping charges* for each delivery service offered by the respective carrier to ship the particular parcel according to the parcel shipping specifications..." (emphasis added) (See also, similar limitations of Claim 58). That is, as compared to the *Fisher* system that itself provides shipment status, Claim 1, for example, is directed to determining which carriers would provide electronic mail delivery notification and then providing a simultaneous display of shipping charges for various carriers and various delivery services that would provide delivery notification for shipping a parcel.

Yet further, it is respectfully asserted that, as distinguished from the *Fisher* system composition of an email message to a customer, Claim 1, for example, recites "...receiv[ing] ... a request input by a user for an electronic mail delivery notification service by a carrier system for shipping a particular parcel ..." and then, "... for each respective carrier of the plurality of carriers that would provide electronic mail delivery notification for shipping the particular parcel according to the request, display[ing] ... a simultaneous identification of shipping charges for each delivery service offered by the respective carrier to ship the particular parcel according to the parcel shipping specifications."

In view of the above-described distinctions between the disclosures of the cited references on the one hand, and independent Claims 1 and 58, and their respective

dependent Claims 2-6, on the other hand, it is respectfully asserted, for the reasons given above, that none of the cited references, whether considered alone or in combination with any other reference of record, do not anticipate, disclose, teach or suggest all of the limitations of Claims 1 and 58, and therefore dependent Claims 2-6, of the present application. It is therefore respectfully requested that the rejection of Claims 1 and 58, and therefore dependent Claims 2-6, be reversed and that those Claims be allowed.

Issue 3 Argument Regarding the Rejection of Independent Claims 1, 49, 50, 51, 52, and 58, and Dependent Claims 2-6, Under 35 U.S.C. §103(a) as Unpatentable over Nicholls in View of Fisher, Kara and InterShipper on the Grounds that the Combination of Nicholls, Fisher, Kara and InterShipper Render as Obvious the Limitations of the Claims for Displaying a Simultaneous Identification of Shipping Charges for Shipping the Particular Parcel for Each Delivery Service Offered by Each Respective Carrier of the Plurality of Carriers That Would Provide the Requested Delivery Notification Service According to the Request: There is No Disclosure in Nicholls, Fisher, Kara and InterShipper for Displaying a Simultaneous Identification of Shipping Charges for Shipping the Particular Parcel for Each Delivery Service Offered by Each Respective Carrier of the Plurality of Carriers That Would Provide the Requested Delivery Notification Service For the Particular Parcel (37 C.F.R. §41.37(c)(1)(vii) subheading)

The Office Action states that “Fisher and Nichols discloses a multiple carrier system that calculates rates for carriers with specific parameters such as a notification of delivery, however Nicholls discloses the automatic selection of a carrier and fails to disclose ... simultaneously displaying the rates of the carriers to the user.” Office Action, Topic No. 6, p. 4.

In an effort to compensate for the above-quoted statement that “...Nicholls ... fails to disclose simultaneously displaying the rates of the carriers to the user...,” the Office Action asserts that “Kara discloses a computer program ... that ... simultaneously displays rates for multiple carriers and calculate shipping rates of multiple services for multiple carriers (first, second, third and fourth) (See Figure 8, column 22, lines 20-38).” Office Action, Topic No. 6, p. 4. The Office Action then concludes that “[i]t would have

been obvious ... to have the shipping rates of Nicholls be displayed to the user as disclosed by Kara, in order to present the user with information from which to make an informed choice as to a particular shipping service provider by which to ship a particular item. (See Kara, column 22)." Office Action, Topic No. 6, pgs. 4-5.

The Office Action then concedes that "Nicholls, Fisher and Kara ... fails to disclose the simultaneous display of the rates for each carrier for each service" (Office Action, Topic No. 7, p. 5), but asserts that "Intershipper is an internet, online website, where internet users can enter origin, destination, package weight and dimensions and will be displayed every method possible that you can use to ship your package for all major shippers (See Internet Update Article Page 1, Paragraphs 1-3)." Office Action, Topic No. 7, p. 5. The Office Action then states that "[i]t would have been obvious to ... modify Nicholls and Kara to display every method possible to ship a package, as disclosed by InterShipper, in order to find the cheapest shipping rates (See Page 1)." Office Action, Topic No. 7, p. 5.

It is respectfully asserted, for the reasons described further below, that there is no disclosure in the references of record, including Nicholls, Fisher, Kara and InterShipper, even when considered in combination, of displaying a simultaneous identification of shipping charges for shipping a particular parcel for each delivery service offered by each respective carrier of a plurality of carriers that would provide a requested delivery notification service as claimed in one way or another by Independent Claims 1, 49, 50, 51, 52, and 58, and Dependent Claims 2-6.

Notwithstanding the aforementioned characterization of Kara by the Office Action that "... Kara discloses a computer program ... that ... simultaneously displays rates for multiple carriers and calculate shipping rates of multiple services for multiple carriers (first, second, third and fourth) (See Figure 8, column 22, lines 20-38)." (Office Action, Topic No. 6, p. 4), the Office Action expressly concedes that Kara fails to disclose simultaneously displaying rates for multiple delivery services for multiple carriers as claimed in one way or another by Independent Claims 1, 49, 50, 51, 52, and 58, and Dependent Claims 2-6. Office Action, Topic No. 7, p. 5. Further, it is respectfully

asserted that Kara fails to disclose simultaneously calculating rates for multiple delivery services for multiple carriers.

Further still, Applicants respectfully disagree with the foregoing conclusion of the Office Action, and respectfully assert that the Office Action fails to cite evidence, of obviousness of the claimed limitations. See Office Action, Topic No. 6, pgs. 4 -5 (concluding that “[i]t would have been obvious ... to have the shipping rates of Nicholls displayed to the user as disclosed by Kara, in order to present the user with information from which to make an informed choice as to a particular shipping service provider by which to ship a particular item. (See Kara, column 22).”) In particular, it is respectfully asserted that the asserted reasoning of the Office Action of obviousness of presenting a user with information for making an informed choice does not in any way teach or suggest the specific limitations of the rejected Claims.

The Office Action then states that “Nicholls, Fisher and Kara, disclose the use of calculating and displaying rates for specific services, for multiple carriers, but fails to disclose the simultaneous display of the rates for each carrier for each service.” Office Action, Topic No. 7, Page 5.

In an effort to compensate for the above-quoted statement of failure by Nicholls, Fisher and Kara to disclose a simultaneous display of the rates for each carrier for each service, the Office Action asserts that “Intershipper is an internet, online website, where internet users can enter origin, destination, package weight and dimensions and will be displayed [sic] every method possible that you can use to ship your package for all major shippers” Office Action, Topic No. 7, p. 4 (citing Internet Update Article Page 1, paragraphs 1-3).

It is respectfully asserted that the InterShipper reference does not disclose the combination of limitations recited by Independent Claims 1, 49, 50, 51, 52, and 58, and Dependent Claims 2-6, even when that reference is considered in combination with the other cited references. In particular, it is respectfully asserted that InterShipper does not disclose displaying a simultaneous identification of shipping charges for shipping a particular parcel for each delivery service offered by each respective carrier of a plurality

of carriers that would provide a requested delivery notification service, as claimed in one way or another by Independent Claims 1, 49, 50, 51, 52, and 58, and Dependent Claims 2-6.

It is respectfully acknowledged that the InterShipper reference makes the following statements:

Internet users can now get shipping rates from all major shippers in just a few seconds. Simply enter your origin, anywhere in the U.S. is OK, and destination, worldwide, along with your package weight and dimensions. The free service will return every method possible that you can use to ship your package and arrange the results in cost order, and color code the results by approximate transit time. World Wide Web: <http://www.wwmerchant.com/iship>.

InterShipper, p. 1, ¶2.

The Office Action is apparently asserting that the above-quoted statements should be inferred to indicate that the InterShipper reference simultaneously displayed its results, and that the InterShipper reference included multiple delivery services offered by multiple carriers in its results.

It is respectfully asserted that both such inferences are equally misplaced and unsupported.

Importantly, the cited InterShipper reference is a publication, not a U.S. patent. As such, there is no presumption of enablement as to the disclosure of the cited InterShipper reference. Moreover, as to the Claims of the present application, it is respectfully asserted that the cited InterShipper reference is not enabling.

Although the cited InterShipper reference may qualify as a prior art reference under Section 103, it may only be used as a prior art reference "... for what is in fact disclosed in it." See Reading and Bates Construction Co. v. Baker Energy Resources Corp., 748 F.2d 645, 652 (Fed. Cir. 1984) (finding a non-enabling promotional brochure cannot be used as a vehicle for qualifying a later filed patent as prior art).

In particular, it is respectfully asserted that, contrary to the inferences apparently asserted by the Office Action, the InterShipper reference never states that the InterShipper service would display its results simultaneously. Rather, the InterShipper

reference states only that “[t]he free service will return every method possible that you can use to ship your package” It does not say that such returned “every method possible” will be simultaneously displayed.

It is therefore respectfully asserted that the inference apparently asserted by the Office Action that the InterShipper reference discloses a simultaneous display where, in fact, none is disclosed, is evidence that the rejection improperly imports a perspective gleaned from the present application to impermissibly read a non-existing feature into the InterShipper reference and the combination of that reference with the other cited references. Cf. In re Mahurkar Patent Litigation, 831 F. Supp. 1354, 1374-75, 28 U.S.P.Q.2d (BNA) 1801, 1817 (N.D. Ill. 1993), aff'd, 71 F.3d 1573, 37 U.S.P.Q.2d 1138 (Fed. Cir. 1995).

Moreover, it is respectfully asserted therefore, that the invention claimed as a whole by Independent Claims 1, 49, 50, 51, 52, and 58, and Dependent Claims 2-6 of the present application, is non-obvious in view of the references of record.

Yet further, contrary to the inference apparently asserted by the Office Action that the InterShipper reference discloses displaying a simultaneous identification of shipping charges for shipping a particular parcel for each delivery service offered by each respective carrier of a plurality of carriers that would provide a requested delivery notification service, as claimed in one way or another by Independent Claims 1, 49, 50, 51, 52, and 58, and Dependent Claims 2-6, it is respectfully asserted that the InterShipper reference never states that the InterShipper service would include shipping charges for each delivery service offered by the “major shippers.” To the contrary, the InterShipper reference specifically states that “Internet users can now get shipping rates from all major shippers ...”, not by each delivery service offered by “all the major shippers” as suggested in the Office Action.

Accordingly, it is respectfully asserted that the combinations of the limitations recited by Independent Claims 1, 49, 50, 51, 52, and 58, and Dependent Claims 2-6, are therefore not disclosed, anticipated, taught or suggested by InterShipper.

Moreover, because the Office Action relied on InterShipper to provide the

conceded missing link of a simultaneous display absent from the Nicholls, Fisher and Kara references, it is therefore respectfully asserted that the combinations of limitations recited by Independent Claims 1, 49, 50, 51, 52, and 58, and Dependent Claims 2-6, are therefore not disclosed, anticipated, taught or suggested by, and are non-obvious in view of, the combination of the Nicholls, Fisher, Kara and InterShipper references.

As distinguished for the above-given reasons from the references of record that do not disclose a simultaneous display or identification, Claim 1 recites:

for each respective carrier of the plurality of carriers that would provide electronic mail delivery notification for shipping the particular parcel according to the request, *display* to a display device configured for communication with the particular user client computer device of the user, as to the particular parcel, a *simultaneous identification* of shipping charges for each delivery service offered by the respective carrier to ship the particular parcel according to the parcel shipping specifications.

(Emphasis added).

As distinguished for the above-given reasons from the references of record that do not disclose a simultaneous display or identification, Claim 49 recites:

for each respective carrier of the plurality of carriers that would provide each of the plurality of delivery notification service options for shipping the particular parcel according to the request, *display* to a display device configured for communication with the particular user client computer device of the user, as to the particular parcel, a *simultaneous identification* of shipping charges for each delivery service offered by the respective carrier to ship the particular parcel according to the parcel shipping specifications.

(Emphasis added).

As distinguished for the above-given reasons from the references of record that do not disclose a simultaneous display or identification, Claim 50 recites:

calculate a service-specific, carrier-specific delivery notification service charge by each delivery service offered by each respective carrier of the plurality of carriers for each respective delivery notification service option requested by the respective user that each delivery service offered by each respective carrier would support for delivery of the respective particular parcel; and

display to a display device configured for communication with a user client computer device associated with the at least one respective user, a *simultaneous identification* of each service-specific, carrier-specific delivery notification service

charge.

(Emphasis added).

As distinguished for the above-given reasons from the references of record that do not disclose a simultaneous display or identification, Claim 51 recites:

simultaneously identify to a respective user of a plurality of users, in response to the respective user's request for at least one delivery notification service option of a plurality of delivery notification service options for shipping a respective parcel, each delivery service offered by each respective carrier of a plurality of carriers that would support each delivery notification service option requested by the respective user for delivery of the respective parcel.

(Emphasis added).

As distinguished for the above-given reasons from the references of record that do not disclose a simultaneous display or identification, Claim 52 recites:

displaying to a respective user of a plurality of users, in response to the respective user's request for at least one delivery notification service option of a plurality of delivery notification service options for shipping a respective parcel, a *simultaneous identification* of each delivery service offered by each respective carrier of a plurality of carriers that would provide the delivery notification service options requested by the respective user for shipping the respective parcel.

(Emphasis added).

As distinguished for the above-given reasons from the references of record that do not disclose a simultaneous display or identification, Claim 58 recites:

(F) *simultaneously displaying* on a display screen associated with said user:

- (1) a first respective service-specific shipping charge that said first carrier would charge in conjunction with performing said delivery of the parcel according to a first respective delivery service offered by said first carrier, said first respective service-specific shipping charge calculated to include a first respective service-specific service charge associated with the first respective delivery service providing an electronic mail delivery notification for the delivery of the parcel,
- (2) a second respective service-specific shipping charge that said first carrier would charge in conjunction with performing said delivery of the parcel according to a second respective delivery service offered by said first carrier, said second respective service-specific shipping charge calculated to include a second respective service-specific service charge associated with the second respective delivery service providing an electronic mail

delivery notification for the delivery of the parcel,

- (3) a third respective service-specific shipping charge that said second carrier would charge in conjunction with performing said delivery of the parcel according to a third respective delivery service offered by the second carrier, said third respective service-specific shipping charge calculated to include a third respective service-specific service charge associated with the third respective delivery service providing an electronic mail delivery notification for the delivery of the parcel, and
- (4) a fourth respective service-specific shipping charge that said second carrier would charge in conjunction with performing said delivery of the parcel according to a fourth respective delivery service offered by said second carrier, said fourth respective service-specific shipping charge calculated to include a fourth respective service-specific service charge associated with the fourth respective delivery service providing an electronic mail delivery notification for the delivery of the parcel.

(Emphasis added).

Yet further, it is respectfully asserted that there is no disclosure in *Fisher* of any monetary distinction or service level distinction, or of any report or display of any monetary or service level distinction, between shipping charges or service levels provided by one *Fisher* carrier or another for providing one type of delivery or another.

As distinguished from *Fisher* in which there is no disclosure of a monetary distinction or service level distinction between shipping charges or service levels provided by one *Fisher* carrier or another, it is respectfully asserted that Claim 1, for example, recites limitations that "... for each respective carrier of the plurality of carriers that would provide electronic mail delivery notification for shipping the particular parcel ... display ... a simultaneous identification of shipping charges for each delivery service offered by the respective carrier to ship the particular parcel according to the parcel shipping specifications..." (emphasis added). That is, as compared to the *Fisher* Claim 1, for example, is directed to providing a simultaneous display of shipping charges for various carriers and various delivery service notification.

Similar to Claim 1, as distinguished from *Fisher* in which there is no disclosure of a monetary distinction or service level distinction between shipping charges or service levels provided by one *Fisher* carrier or another, it is respectfully asserted that Claim 49

recites:

for each respective carrier of the plurality of carriers that would provide each of the plurality of delivery notification service options for shipping the particular parcel according to the request, *display* to a display device configured for communication with the particular user client computer device of the user, as to the particular parcel, a *simultaneous identification* of shipping charges for each delivery service offered by the respective carrier to ship the particular parcel according to the parcel shipping specifications.

(Emphasis added).

For reasons similar to those described above regarding Claims 1 and 49, it is respectfully submitted that *Fisher* does not disclose "... display[ing] to a display device configured for communication with a user client computer device associated with the at least one respective user, a simultaneous identification of each service-specific, carrier-specific delivery notification service charge ..." as recited by Claim 50.

For reasons similar to those described above regarding Claims 1, 49, and 50, it is respectfully submitted that *Fisher* does not disclose "...simultaneously displaying ... service-specific shipping charges ..." for multiple delivery services offered by multiple carriers as claimed by Claim 58.

As compared to a system such as the one disclosed in *Fisher* that itself composes a shipment status email message based on a carrier-system interrogation, it is respectfully asserted that Claim 51, for example, recites limitations for "... simultaneously identify[ing] to a respective user of a plurality of users, in response to the respective user's request for at least one delivery notification service option of a plurality of delivery notification service options for shipping a respective parcel, each delivery service offered by each respective carrier of a plurality of carriers that would support each delivery notification service option requested by the respective user for delivery of the respective parcel...." (Emphasis added.) That is, as compared to the *Fisher* system that itself provides shipment status, Claim 51, for example, is directed to providing a simultaneous identification of "... each delivery service offered by each respective carrier of a plurality of carriers that would support each delivery notification service option requested by the respective user for delivery of the respective parcel...."

For reasons similar to those described above regarding Claim 51, it is respectfully asserted that *Fisher* does not disclose "... displaying to a respective user of a plurality of users, in response to the respective user's request for at least one delivery notification service option of a plurality of delivery notification service options for shipping a respective parcel, a simultaneous identification of each delivery service offered by each respective carrier of a plurality of carriers that would provide the delivery notification service options requested by the respective user for shipping the respective parcel..." as recited by amended Claim 52.

Further, Claim 1 (*cf. also*, Claim 49), for example, recites that "... a request input by a user ..." is "... for an electronic mail delivery notification service by a *carrier system* ..." (emphasis added) as compared to an electronic mail delivery notification service *by the claimed system*. That is, as compared to a system as in *Fisher* that discloses *providing* electronic mail delivery notification, e.g., Claim 1 recites "... a request input by a user for an electronic mail delivery notification service *by a carrier system* for shipping a particular parcel ...".

For the reasons given and authorities cited above, it is respectfully asserted that none of the references of record, whether considered alone, or in combination with any other reference, anticipate, disclose, teach or suggest all of the limitations of the independent Claims 1, 49-52 and 58 of the present application.

In view of the above-given reasons and authorities, it is respectfully asserted that the combination of limitations claimed by Independent Claims 1, 49, 50, 51, 52, and 58, and Dependent Claims 2-6, are non-obvious over the references of record. It is therefore respectfully requested that the rejections of Claims 1-6, 49-52 and 58 be reversed and that those Claims be allowed.

Issue 4 Argument Regarding the Rejection of Independent Claim 28, and Dependent Claims 29-33, Under 35 U.S.C. §103(a) as Unpatentable over Nicholls in View of Pauly, Kara and InterShipper on the Grounds that the Combination of Nicholls, Pauly, Kara and InterShipper Render as Obvious the Limitations of the Claims for Determining Carriers That Would Provide Verbal Delivery Notification for Shipping a Particular Parcel: There is No Disclosure in Nicholls, Pauly, Kara or InterShipper of Determining Carriers That Would Provide Verbal Delivery Notification for Shipping a Particular Parcel (37 C.F.R. §41.37(c)(1)(vii) subheading)

For the reasons given and the authorities cited below, it is respectfully asserted that independent Claim 28, and therefore dependent Claims 29-33, are patentably distinct from the references of record. It is therefore respectfully requested that the rejection of Claim 28, and therefore dependent Claims 29-33, be reversed and that those Claims be allowed. In particular, it is respectfully asserted that none of the references of record, whether considered alone or in combination, disclose, anticipate, teach or suggest all of the limitations recited in independent Claim 28 as discussed in detail in the following paragraphs.

The Office Action states that "Nicholls ... fails to disclose ... determining which carriers provided a selected service...." Office Action, Topic No.14, p. 6.

In view of the failure of Nicholls to teach determining carriers that would provide verbal delivery notification for shipping a particular parcel, as claimed by independent Claim 28, the Office Action asserts that "Kara discloses a computer program used for multiple shippers that determines which carriers provided a selected service. Office Action, Topic No. 14, p. 6 (citing Kara, col. 22, lines 13-48). However, as compared to identifying or determining carrier support for providing a particular special service, such as verbal delivery notification, with respect to a particular parcel as claimed in one way or another by Claims 28-33, the cited portion of Kara explains that "[t]he E-STAMP program will automatically incorporate the ... entered parameters—weight, class, zone—in order to correctly calculate the correct postage ... Where a selected shipping service does not provide a desired shipping and/or delivery parameter, the E-STAMP program may indicate such and provide the fees for a service offered by that particular

shipping service provider most near that desired by the user." Kara, col. 22, lines 13-38.

Notwithstanding the above-cited assertions by the Office Action, it is respectfully asserted that the above-cited disclosure of Kara does not disclose any facility for user input of an indication of any type of special service of the type claimed (e.g., verbal delivery notification) that would be coincident with delivery of a particular package using a particular type of delivery service (e.g., Same Day, Overnight, 2-day, 3-Day, etc. as depicted, for example, in FIG. 8 of Kara). Rather, according to the above-cited disclosure, Kara discloses consideration of "desired shipping and/or delivery parameters" and mentions the "entered parameters" of "weight, class, zone." See Kara, col. 22, lines 13-38. It is respectfully asserted that special services such as those claimed (e.g., verbal delivery notification), that may, or may not, be provided by particular carriers, are distinguished from basic parcel specifications such as weight, and basic shipping parameters such as class and zone and are also distinguished from various levels of delivery service (e.g., Same Day, Overnight, 2-day, 3-Day, etc. as depicted, for example, in FIG. 8 of Kara).

Moreover, even if it were assumed for the sake of argument only that Kara's consideration of basic parcel specifications, basic shipping parameters and various levels of delivery service could be considered to be special service options of the type claimed, it is respectfully asserted that the above-cited disclosure of Kara fails to disclose, anticipate, teach or suggest identifying or determining, for each respective carrier of a plurality of carriers, whether a respective carrier would provide a special service, such as the claimed verbal delivery notification, for shipping a *particular parcel according to specifications of a user's request*.

It is therefore respectfully asserted that none of the cited references, including Nicholls and Kara, disclose that some carriers may provide a particular special service, such as verbal delivery notification, and that some carriers may not, with respect to a particular parcel. Moreover, it is respectfully asserted that none of the cited references, including Nicholls and Kara, disclose identifying or determining whether or not a carrier

would provide a particular special service, such as verbal delivery notification, with respect to a particular parcel.

As compared to the apparent assumption by some of the references of record that all carriers provide special services, or in the case, for example, of *Kara*, that if a carrier provides a certain service, that it would do so with respect to all parcels, the Specification of the present application explains:

Another of the problems in dealing with standalone Carrier systems is that, if the Shipper wants verbal notification that a particular parcel has been delivered, the Shipper must attempt to apply each Carrier's rules for providing a Shipper with verbal notification that a particular parcel has been delivered. Each Carrier's verbal delivery notification pricing rules must be separately applied by the Shipper to shipment of a particular parcel to determine whether or not the particular Carrier offers verbal delivery notification and if so, the price for the service.

Specification, p. 2, line 29 – p. 3, line 5.

As compared to the apparent assumption by some of the references of record that all carriers provide special services, or assuming for the sake of argument in, for example, *Kara*, that if a carrier provides a certain service, that it would do so with respect to all parcels, Claim 28 recites "...for each respective carrier of the plurality of carriers *that would provide verbal delivery notification* for shipping the particular parcel according to the request, display ..., as to the particular parcel, a simultaneous identification of shipping charges for each delivery service offered by the respective carrier to ship the particular parcel according to the parcel shipping specifications." (Emphasis added).

It is respectfully asserted that the above-recited limitations of Claim 28, and therefore dependent Claims 29-33, are distinguished from the references of record.

Therefore, it is respectfully asserted that none of the references of record disclose, anticipate, teach or suggest determining which carriers of a plurality of carriers would provide for delivery of a particular parcel, a verbal delivery notification service, and which do not, as claimed by Claim 28, and therefore by dependent Claims 29-33.

The Office Action states that "Nicholls ... fails to specifically disclose the proof of delivery is a verbal delivery notification ..." (Office Action, Topic No. 13, p. 6), but asserts that "Pauley [sic] discloses the use of customer service representatives which provide verbal communication of delivery status" Office Action, Topic No. 13, p. 6. The Office Action further asserts that "[i]t would have been obvious ... to have the proof of delivery of Nicholls be the notification by the costumer [sic] service representative, as disclosed by Pauley [sic]" Office Action, Topic No. 13, p. 6. The Office Action further asserts that the aforementioned combination "... would have been obvious ... in order to allow users to obtain delivery information without the use of a computer [citing Pauly, cols. 2 and 4]." Office Action, Topic No. 13, p. 6.

For the following reasons and authorities, it is respectfully asserted that the combination of Pauly with Nicholls and the other references of record, adds nothing to support the rejection of Claims 28-33. That is because, as further explained below, the disclosure of Pauly is fundamentally different than the limitations of independent Claim 28.

Pauly is directed to a central ordering/inventory system for ongoing fulfillment of disposable contact lens prescriptions. See Pauly, Abstract. Pauly discloses shipping from the centralized inventory to the respective eye care professionals. See, e.g., Pauly, col. 3, lines 1-10.

As compared to the limitations of e.g., Claim 28 "...for each respective carrier of a plurality of carriers, determin[ing] whether the respective carrier would provide verbal delivery notification for shipping the particular parcel according to the request ..." or for providing a "... display [of] ... a simultaneous identification of shipping charges for each delivery service offered by the respective carrier to ship the particular parcel according to the parcel shipping specifications...", the Pauly system is "... [p]rogram[med] to allow customer service representatives to view orders already generated and learn the status of these orders, picked, shipped, etc. The representatives will also be able to confirm prescriptions as well as ship-to addresses." Pauly, col. 9, lines 34-38.

As compared to the above-cited assertions by the Office Action, it is respectfully

submitted that the limitations claimed by Claims 28-33 are not directed to supplying, or in any way providing, verbal communication of delivery status. Rather, Claim 28, for example, recites limitations to "... receive ... a request input by a user for a verbal delivery notification service by a carrier for shipping a particular parcel and an input by the user of parcel specifications for the particular parcel ..." and "for each respective carrier of a plurality of carriers, determine whether the respective carrier would provide verbal delivery notification for shipping the particular parcel according to the request ..." and "... for each respective carrier of the plurality of carriers that would provide verbal delivery notification for shipping the particular parcel according to the request, display ... a simultaneous identification of *shipping charges* for each delivery service offered by the respective carrier to ship the particular parcel according to the parcel shipping specifications." That is, as compared to the assertion by the Office Action that Pauly "... discloses the use of customer service representatives which provide verbal communication of delivery status...", Claim 28, for example, is directed to determining which carriers provide the requested verbal delivery notification for shipping a particular parcel, and to providing a simultaneous display of *shipping charges* for various carriers and various delivery services that would provide the requested verbal delivery notification for shipping a particular parcel.

Further still, as compared to the assertion by the Office Action that it would have been obvious to make the asserted combination "...in order to allow users to obtain delivery information without the use of a computer ...," it is respectfully asserted that there is no disclosure in Pauly of carriers themselves providing any type of delivery notification. Yet further, it is respectfully asserted that there is no disclosure in Pauly of any monetary distinction or service level distinction, or of any report or display of any monetary or service level distinction, between shipping charges or service levels provided by one carrier or another for providing one type or another of delivery notification.

The Office Action cites InterShipper as grounds for rejecting Claims 28-33. However it is respectfully submitted that the Office Action does not assert that

InterShipper discloses, anticipates, teaches or suggests, and it is respectfully asserted that in fact, InterShipper does not disclose, anticipate, teach or suggest, determining whether each respective carrier of a plurality of carriers would provide a requested verbal delivery notification service for shipping a particular parcel, as claimed by independent Claim 28.

In view of the above-described distinctions between the disclosures of the references of record on the one hand, and Claims 28-33, on the other hand, it is respectfully asserted, for the reasons given and under the authorities cited above, that the references of record, whether considered alone or in combination, do not anticipate, disclose, teach or suggest all of the limitations of Claims 28-33 of the present application. It is therefore respectfully requested that the rejection of Claims 28-33 be reversed and that those Claims be allowed.

Issue 5 Argument Regarding the Rejection of Independent Claim 28, and Dependent Claims 29-33, Under 35 U.S.C. §103(a) as Unpatentable over Nicholls in View of Pauly, Kara and InterShipper on the Grounds that the Combination of Nicholls, Pauly, Kara and InterShipper Render as Obvious the Limitations of the Claims for Displaying a Simultaneous Identification of Shipping Charges for Shipping the Particular Parcel for Each Delivery Service Offered by Each Respective Carrier of the Plurality of Carriers That Would Provide Verbal Delivery Notification Service According to the Request: There is No Disclosure in Nicholls, Pauly, Kara and InterShipper for Displaying a Simultaneous Identification of Shipping Charges for Shipping the Particular Parcel for Each Delivery Service Offered by Each Respective Carrier of the Plurality of Carriers That Would Provide Verbal Delivery Notification Service (37 C.F.R. §41.37(c)(1)(vii) subheading)

With respect to the limitations claimed by Claim 28 regarding a display of a simultaneous identification of shipping charges for each delivery service offered by each respective carrier, the Office Action asserts that “Nicholls and Pauley disclose a multiple carrier system that calculates rates for carriers with specific parameters such as a notification of delivery” Office Action, Topic No. 14, p. 6. Even so, the Office Action also states that “... Nicholls discloses the automatic selection of a carrier and fails to

disclose displaying the rates of the carriers to the user and determining which carriers provided a selected service. Office Action, Topic No. 14, p. 6.

In an effort to compensate for the above-quoted statement that "...Nicholls ... fails to disclose simultaneously displaying the rates of the carriers to the user..." the Office Action asserts that "Kara discloses a computer program ... that determines which carriers can provide a selected service (citing column 22 of Kara, lines 13-48)." Office Action, Topic No. 14, p. 6. The Office Action then concludes that "[i]t would have been obvious ... to have the shipping rates of Nicholls be displayed to the user as disclosed by Kara, in order to present the user with information from which to make an informed choice as to a particular shipping service provider by which to ship a particular item. (See Kara, column 22)." Office Action, Topic No. 14, pgs. 6-7.

The Office Action then concedes that "Nicholls, Pauley and Kara ... fails [sic] to disclose the simultaneous display of the rates for each carrier for each service." Office Action, Topic No. 15, p. 7. But to compensate for the conceded failure of Nicholls, Pauley and Kara, the Office Action asserts that "Intershipper is an internet, online website, where internet users can enter origin, destination, package weight and dimensions and will be displayed every method possible that you can use to ship your package for all major shippers (See Internet Update Article Page 1, Paragraphs 1-3)." Office Action, Topic No. 15, p. 7. The Office Action then states that "[i]t would have been obvious to ... modify Nicholls and Kara to display every method possible to ship a package, as disclosed by InterShipper, in order to find the cheapest shipping rate (See Page 1)." Office Action, Topic No. 15, p. 7.

Applicants respectfully disagree with the foregoing conclusion of obviousness by the Office Action, and respectfully assert that the Office Action fails to cite evidence of obviousness of the claimed limitations. See Office Action, Topic No. 15, p. 7 (concluding that "[i]t would have been obvious ... to have the shipping rates of Nicholls displayed to the user as disclosed by Kara, in order to present the user with information from which to make an informed choice as to a particular shipping service provider by which to ship a particular item. (See Kara, column 22)."). In particular, it is respectfully

asserted that the asserted reasoning of the Office Action of obviousness of presenting a user with information for making an informed choice does not in any way teach or suggest the specific limitations of rejected Claims 28-33 and therefore fails to support the conclusion of obviousness of the claimed limitations with evidence as required by MPEP §706.02(j) and MPEP §2143.

Further, it is respectfully asserted that the InterShipper reference does not disclose the combination of limitations recited by Claims 28-33, even when that reference is considered in combination with the other references of record. In particular, it is respectfully asserted that InterShipper does not disclose "for each respective carrier of the plurality of carriers that would provide verbal delivery notification for shipping the particular parcel according to the request, display to a display device ... a simultaneous identification of shipping charges for each delivery service offered by the respective carrier to ship the particular parcel according to the parcel shipping specifications ..." as claimed by independent Claim 28.

It is respectfully acknowledged that the InterShipper reference makes the following statements:

Internet users can now get shipping rates from all major shippers in just a few seconds. Simply enter your origin, anywhere in the U.S. is OK, and destination, worldwide, along with your package weight and dimensions. The free service will return every method possible that you can use to ship your package and arrange the results in cost order, and color code the results by approximate transit time.
World Wide Web: <http://www.wwmerchant.com/iship>.

InterShipper, p. 1, ¶2.

The Office Action is apparently asserting that the above-quoted statements should be inferred to indicate that the InterShipper reference simultaneously displayed its results, and that the InterShipper reference included each delivery service offered by each respective carrier in its results.

It is respectfully asserted that both such inferences are equally misplaced and unsupported.

Importantly, the cited InterShipper reference is a publication, not a U.S. patent. As such, there is no presumption of enablement as to the disclosure of the cited InterShipper reference. Moreover, as to the Claims of the present application, it is respectfully asserted that the cited InterShipper reference is not enabling.

Although the cited InterShipper reference may qualify as a prior art reference under Section 103, it may only be used as a prior art reference "... for what is in fact disclosed in it." See Reading and Bates Construction Co. v. Baker Energy Resources Corp., 748 F.2d 645, 652 (Fed. Cir. 1984) (finding a non-enabling promotional brochure cannot be used as a vehicle for qualifying a later filed patent as prior art).

In particular, it is respectfully asserted that, contrary to the inferences apparently asserted by the Office Action, the InterShipper reference never states that the InterShipper service would display its results simultaneously. Rather, the InterShipper reference states only that "[t]he free service will return every method possible that you can use to ship your package" It does not say that such returned "every method possible" will be simultaneously displayed, nor does it state that "every method possible" means each delivery service offered by each carrier as claimed by Independent Claim 28.

It is therefore respectfully asserted that the inference apparently asserted by the Office Action that the InterShipper reference discloses a simultaneous display where, in fact, none is disclosed, is evidence that the rejection improperly imports a perspective gleaned from the present application to impermissibly read a non-existing feature into the InterShipper reference and the combination of that reference with the other cited references. Cf. In re Mahurkar Patent Litigation, 831 F. Supp. 1354, 1374-75, 28 U.S.P.Q.2d (BNA) 1801, 1817 (N.D. Ill. 1993), aff'd, 71 F.3d 1573, 37 U.S.P.Q.2d 1138 (Fed. Cir. 1995).

Yet further, contrary to the inference apparently asserted by the Office Action that the InterShipper reference discloses displaying a simultaneous identification of shipping charges for shipping a particular parcel for each delivery service offered by each respective carrier of a plurality of carriers that would provide a requested delivery

notification service, as claimed by Independent Claim 28, and Dependent Claims 29-33, it is respectfully asserted that the InterShipper reference never states that the InterShipper service would include shipping charges for each delivery service offered by the "major shippers." To the contrary, the InterShipper reference specifically states that "Internet users can now get shipping rates from all major shippers ..." (InterShipper, p. 1, ¶1), but does not say that "every method" means each delivery service offered by "all the major shippers," as suggested by the Office Action.

Accordingly, it is respectfully asserted that the combinations of the limitations recited by Independent Claim 28, and the Claims dependent on it, namely, Dependent Claims 29-33 are therefore not disclosed, anticipated, taught or suggested by InterShipper, even when that reference is considered in combination with the other references of record.

Moreover, because the Office Action relied on InterShipper to provide the conceded missing link of a simultaneous display absent from the Nicholls, Pauly and Kara references, it is therefore respectfully asserted that the combinations of limitations recited by Independent Claim 28, and Dependent Claims 29-33, are therefore not disclosed, anticipated, taught or suggested by, and are non-obvious in view of, the combination of the Nicholls, Pauly, Kara and InterShipper references.

As distinguished for the above-given reasons from the references of record that do not disclose a simultaneous display or identification, Claim 28 recites:

for each respective carrier of the plurality of carriers that would provide verbal delivery notification for shipping the particular parcel according to the request, display ..., as to the particular parcel, a *simultaneous identification of shipping charges* for each delivery service offered by the respective carrier to ship the particular parcel according to the parcel shipping specifications.

(Emphasis added).

Yet further, it is respectfully submitted that there is no disclosure in Pauly of any monetary distinction or service level distinction, or of any report or display of any monetary or service level distinction, between shipping charges or service levels provided by one Pauly carrier or another for providing one type or another of delivery.

As distinguished from *Pauly* in which there is no disclosure of a monetary distinction or service level distinction between shipping charges or service levels provided by one *Pauly* carrier or another, it is respectfully asserted that Claim 28 recites limitations that "... *for each respective carrier of the plurality of carriers that would provide verbal delivery notification for shipping the particular parcel according to the request*, display to a display device ..., as to the particular parcel, a simultaneous identification of shipping charges for each delivery service offered by the respective carrier to ship the particular parcel according to the parcel shipping specifications..." (emphasis added). That is, as compared to the *Pauly*, Claim 28 is directed to providing a simultaneous display of shipping charges for various carriers and various delivery services.

Further, Claim 28 recites that "... a request input by a user ..." is "... for a verbal delivery notification service *by a carrier* for shipping a particular parcel ..." (emphasis added) as compared to a verbal delivery notification service *by the claimed process*. That is, as compared to a process as in *Pauly* that discloses *providing* verbal delivery notification, e.g., Claim 28 recites that the request is for a *carrier* to provide the requested verbal delivery notification.

For the reasons given and authorities cited above, it is respectfully asserted that none of the references of record, whether considered alone, or in combination with any other reference(s), anticipate, disclose, teach or suggest all of the limitations of Claims 28-33 of the present application.

In view of the above-given reasons and authorities, it is respectfully asserted that the combination of limitations claimed by Claims 28-33 are non-obvious over the references of record. It is therefore respectfully requested that the rejections of Claims 28-33 be reversed and that those Claims be allowed.

ARGUMENT CONCLUSION

For the above-given reasons and authorities, in view of the above-described distinctions between the disclosures of *Nicholls*, *Fisher*, *Kara*, *Pauly*, and *InterShipper*

on the one hand, and independent Claims 1, 28, 49-52 and 58, and therefore the Claims dependent on independent Claims 1, 28, 49-52 and 58, namely, dependent Claims 2-6 and 29-33, it is respectfully requested that the rejection of Claims 1-6, 28-33, 49-52 and 58 be reversed and that those Claims be allowed.

Respectfully submitted,

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CLAIMS APPENDIX (37 C.F.R. §41.37(c)(1)(viii) heading)

(Double-Spaced as required by MPEP §1205.02)

THE CLAIMS ON APPEAL ARE THE PENDING CLAIMS AFTER THE AMENDMENT AND RESPONSE FILED FEBRUARY 14, 2007 IN RESPONSE TO THE OFFICE ACTION DATED NOVEMBER 16, 2006, AND ARE AS FOLLOWS:

1. A server-based shipping management computer system, said server-based shipping management computer system comprising at least one server computer device, wherein said server-based shipping management computer system is programmed to:

receive from a particular user client computer device of a plurality of user client computer devices, a request input by a user for an electronic mail delivery notification service by a carrier system for shipping a particular parcel and an input by the user of parcel specifications for the particular parcel;

for each respective carrier of a plurality of carriers, determine whether the respective carrier would provide electronic mail delivery notification for shipping the particular parcel according to the request; and

for each respective carrier of the plurality of carriers that would provide electronic mail delivery notification for shipping the particular parcel according to the request, display to a display device configured for communication with the particular user client computer device of the user, as to the particular parcel, a simultaneous identification of

shipping charges for each delivery service offered by the respective carrier to ship the particular parcel according to the parcel shipping specifications.

2. The server-based shipping management computer system of Claim 1, said server-based shipping management computer system further programmed to:
recognize as a user request for an electronic mail delivery notification service by a carrier system for the particular parcel, a user input by the user of a selection of an electronic mail delivery notification indicator.
3. The server-based shipping management computer system of Claim 2, said server-based shipping management computer system further programmed to:
store in a database, a record corresponding to the particular user and to the particular parcel, said record comprising information about the request for electronic mail delivery notification.
4. The server-based shipping management computer system of Claim 3, said server-based shipping management computer system further programmed to:
for each respective carrier of a plurality of carriers that would provide electronic mail delivery notification for shipping the particular parcel according to the request, for each respective service of a plurality of services offered by the respective carrier, calculate a respective service charge for delivering the respective particular parcel via the respective service, wherein each said respective service charge is calculated

according to at least one electronic mail delivery notification rule for the respective service offered by the respective carrier; and

generate a simultaneous online display of the respective service charges to the display device configured for communication with the particular user client computer device of the user.

5. The server-based shipping management computer system of Claim 3, said server-based shipping management computer system further programmed to:

generate a simultaneous online display, to the display device configured for communication with the particular user client computer device of the user, of a plurality of respective service charges associated with shipping the particular parcel, wherein each respective service charge of the plurality of respective service charges is calculated according to a respective set of electronic mail delivery notification rules for the respective delivery service offered by the respective carrier and according to a respective set of service-specific rules of the respective delivery service for shipping said particular parcel.

6. The server-based shipping management computer system of Claim 3, said server-based shipping management computer system further programmed to:

generate a simultaneous online display to the display device configured for communication with the particular user client computer device of the user, of a plurality of shipping rates, wherein each shipping rate of the plurality of shipping rates

corresponds to a respective delivery service offered by a particular carrier of the plurality of carriers that would provide electronic mail delivery notification for shipping the particular parcel according to the request, wherein each shipping rate of the plurality of shipping rates includes an electronic mail delivery notification service charge associated with the respective delivery service shipping the particular parcel according to a set of electronic mail delivery notification rules for the respective delivery service.

28. A server-based shipping management computer system, said server-based shipping management computer system comprising at least one computer device, wherein said server-based shipping management computer system is programmed to:
 - receive from a particular user client computer devices of a plurality of user client computer devices, a request input by a user for a verbal delivery notification service by a carrier for shipping a particular parcel and an input by the user of parcel specifications for the particular parcel;
 - for each respective carrier of a plurality of carriers, determine whether the respective carrier would provide verbal delivery notification for shipping the particular parcel according to the request; and
 - for each respective carrier of the plurality of carriers that would provide verbal delivery notification for shipping the particular parcel according to the request, display to a display device configured for communication with the particular user client computer device of the user, as to the particular parcel, a simultaneous identification of shipping charges for each delivery service offered by the respective carrier to ship the particular

parcel according to the parcel shipping specifications.

29. The server-based shipping management computer system of Claim 28, said server-based shipping management computer system further programmed to:

recognize as a user request for a verbal notification service by a carrier for the particular parcel, a user input by the user of a selection of a verbal delivery notification indicator.

30. The server-based shipping management computer system of Claim 29, said server-based shipping management computer system further programmed to:

store in a database, a record corresponding to the particular user and to the particular parcel, said record comprising information about the request for verbal delivery notification.

31. The server-based shipping management computer system of Claim 30, said server-based shipping management computer system further programmed to:

for each respective carrier of a plurality of carriers that would provide verbal delivery notification for shipping the particular parcel according to the request, for each respective service of a plurality of services offered by the respective carrier, calculate a respective service charge for delivering the respective particular parcel via the respective service, wherein each said respective service charge is calculated according

to at least one verbal delivery notification rule for the respective service offered by the respective carrier; and

generate a simultaneous online display of the respective service charges to the display device configured for communication with the particular user client computer device of the user.

32. The server-based shipping management computer system of Claim 30, said server-based shipping management computer system further programmed to:

generate a simultaneous online display, to the display device configured for communication with the particular user client computer device of the user, of a plurality of respective service charges associated with shipping the particular parcel, wherein each respective service charge of the plurality of respective service charges is calculated according to a respective set of verbal delivery notification rules for the respective delivery service offered by the respective carrier and according to a respective set of service-specific rules of the respective delivery service for shipping said particular parcel.

33. The server-based shipping management computer system of Claim 30, said server-based shipping management computer system further programmed to:

generate a simultaneous online display, to the display device configured for communication with the particular user client computer device of the user, of a plurality of shipping rates, wherein each shipping rate of the plurality of shipping rates

corresponds to a respective delivery service offered by a particular carrier of the plurality of carriers that would provide verbal delivery notification for shipping the particular parcel according to the request, wherein each shipping rate of the plurality of shipping rates includes a verbal delivery notification service charge associated with the respective delivery service shipping the particular parcel according to a set of verbal delivery notification rules for the respective delivery service.

49. A server-based shipping management computer system, said server-based shipping management computer system comprising at least one server computer device, wherein said server-based shipping management computer system is programmed to:

receive from a particular user client computer device of a plurality of user client computer devices, a request input by a user for a plurality of delivery notification service options for shipping a particular parcel and an input by the user of parcel specifications for the particular parcel;

for each respective carrier of a plurality of carriers, determine whether the respective carrier would provide each of the plurality of delivery notification service options for shipping the particular parcel according to the request; and

for each respective carrier of the plurality of carriers that would provide each of the plurality of delivery notification service options for shipping the particular parcel according to the request, display to a display device configured for communication with the particular user client computer device of the user, as to the particular parcel, a

simultaneous identification of shipping charges for each delivery service offered by the respective carrier to ship the particular parcel according to the parcel shipping specifications.

50. A server-based shipping management computer system, said server-based shipping management computer system comprising at least one server computer device, wherein said server-based shipping management computer system is programmed to:

receive from an at least one respective user of a plurality of users, a respective request for an at least one delivery notification service option of a plurality of delivery notification service options for shipping a respective particular parcel;

for each respective carrier of a plurality of carriers, for each respective delivery notification service option of the at least one delivery notification service options, determine whether the respective carrier would provide the respective delivery notification service option for shipping the particular parcel according to the request;

calculate a service-specific, carrier-specific delivery notification service charge by each delivery service offered by each respective carrier of the plurality of carriers for each respective delivery notification service option requested by the respective user that each delivery service offered by each respective carrier would support for delivery of the respective particular parcel; and

display to a display device configured for communication with a user client computer device associated with the at least one respective user, a simultaneous

identification of each service-specific, carrier-specific delivery notification service charge.

51. A shipping management computer system, said computer system comprising at least one computer device, wherein said shipping management computer system is programmed to:

simultaneously identify to a respective user of a plurality of users, in response to the respective user's request for at least one delivery notification service option of a plurality of delivery notification service options for shipping a respective parcel, each delivery service offered by each respective carrier of a plurality of carriers that would support each delivery notification service option requested by the respective user for delivery of the respective parcel.

52. A method using a computer system for managing shipping of a plurality of parcels shipped by any one of a plurality of carriers, wherein said computer system comprises at least one computer device, the method comprising:

displaying to a respective user of a plurality of users, in response to the respective user's request for at least one delivery notification service option of a plurality of delivery notification service options for shipping a respective parcel, a simultaneous identification of each delivery service offered by each respective carrier of a plurality of carriers that would provide the delivery notification service options requested by the respective user for shipping the respective parcel.

58. A shipping management computer system that is configured for:

- (A) allowing a user to select, via a notification option selection, an electronic mail delivery notification option to be offered in conjunction with a delivery of a parcel;
- (B) receiving said notification option selection from said user;
- (C) in response to receiving said notification option selection:
 - (1) identifying, from a plurality of carriers, a first carrier that would offer an electronic mail delivery notification service in conjunction with performing said delivery of the parcel, and
 - (2) identifying, from said plurality of carriers, a second carrier that would offer an electronic mail delivery notification service in conjunction with performing said delivery of the parcel;
- (D) for each delivery service offered by said first carrier, using a first set of electronic mail delivery notification rules defined by said first carrier for the respective delivery service to calculate a respective service-specific service charge that said first carrier would charge for providing an electronic mail delivery notification service in conjunction with performing said delivery of the parcel according to the respective delivery service;
- (E) for each delivery service offered by said second carrier, using a second set of electronic mail delivery notification rules defined by said second carrier for the respective delivery service to calculate a respective service-specific service charge that said second carrier would charge for providing an electronic mail delivery

notification service in conjunction with performing said delivery of the parcel according to the respective delivery service; and

(F) simultaneously displaying on a display screen associated with said user:

(1) a first respective service-specific shipping charge that said first carrier would charge in conjunction with performing said delivery of the parcel according to a first respective delivery service offered by said first carrier, said first respective service-specific shipping charge calculated to include a first respective service-specific service charge associated with the first respective delivery service providing an electronic mail delivery notification for the delivery of the parcel,

(2) a second respective service-specific shipping charge that said first carrier would charge in conjunction with performing said delivery of the parcel according to a second respective delivery service offered by said first carrier, said second respective service-specific shipping charge calculated to include a second respective service-specific service charge associated with the second respective delivery service providing an electronic mail delivery notification for the delivery of the parcel,

(3) a third respective service-specific shipping charge that said second carrier would charge in conjunction with performing said delivery of the parcel according to a third respective delivery service offered by the second carrier, said third respective service-specific shipping charge calculated to include a third respective service-specific service charge associated with the third respective

delivery service providing an electronic mail delivery notification for the delivery of the parcel, and

(4) a fourth respective service-specific shipping charge that said second carrier would charge in conjunction with performing said delivery of the parcel according to a fourth respective delivery service offered by said second carrier, said fourth respective service-specific shipping charge calculated to include a fourth respective service-specific service charge associated with the fourth respective delivery service providing an electronic mail delivery notification for the delivery of the parcel.

EVIDENCE APPENDIX (37 C.F.R. §41.37(c)(1)(ix) heading)

A copy of Nicholls et al. (U.S. Patent No. 5,485,369; "Nicholls") as relied on in the Office Action dated February 20, 2008 is attached hereto.

A copy of Kara (U.S. Patent No. 6,233,568; "Kara") as relied on in the Office Action dated February 20, 2008 is attached hereto.

A copy of InterShipper ((Newsbytes Article, February 18, 1998, "Internet Update"; "Intershipper") as relied on in the Office Action dated February 20, 2008 is attached hereto.

A copy of Fisher et al. (U.S. Patent No. 6,047,264; "Fisher") as relied on in the Office Action dated February 20, 2008 is attached hereto.

A copy of Pauly et al. (U.S. Patent No. 4,958,280; "Pauly") as relied on in the Office Action dated February 20, 2008 is attached hereto.



US005485369A

United States Patent [19]

Nicholls et al.

[11] **Patent Number:** 5,485,369[45] **Date of Patent:** Jan. 16, 1996[54] **LOGISTICS SYSTEM FOR AUTOMATING TRANSPORTATION OF GOODS**

[75] Inventors: Peter Nicholls; Robert Kinyon; Jeff Skaistis, all of Tulsa; Steve Johnson, Glenpool; Andy Locker, Tulsa; Chris Guzik, Tulsa; Scott Howard, Tulsa, all of Okla.

[73] Assignee: TanData Corporation, Tulsa, Okla.

[21] Appl. No.: 128,358

[22] Filed: Sep. 28, 1993

[51] Int. Cl.⁶ G06F 17/60

[52] U.S. Cl. 364/401; 364/464.02; 364/468

[58] Field of Search 364/401-406,
364/408, 468, 478, 464.02, 464.03, 466;
395/200, 275, 600

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Primary Examiner—Robert A. Weinhardt

Assistant Examiner—Frantzy Poinvil

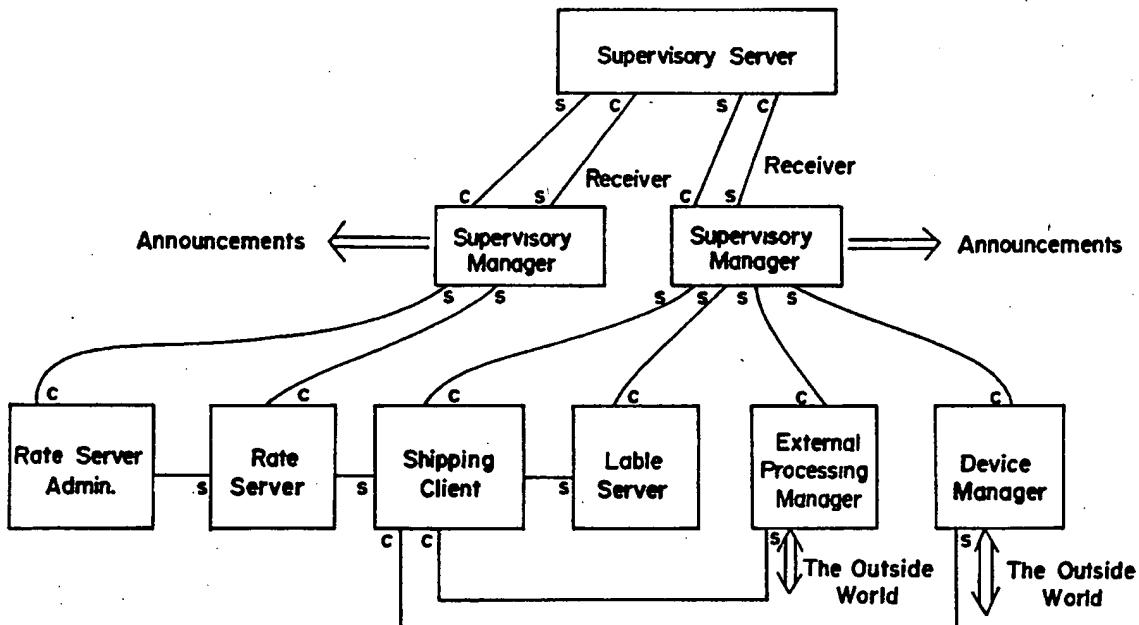
Attorney, Agent, or Firm—Harness, Dickey & Pierce

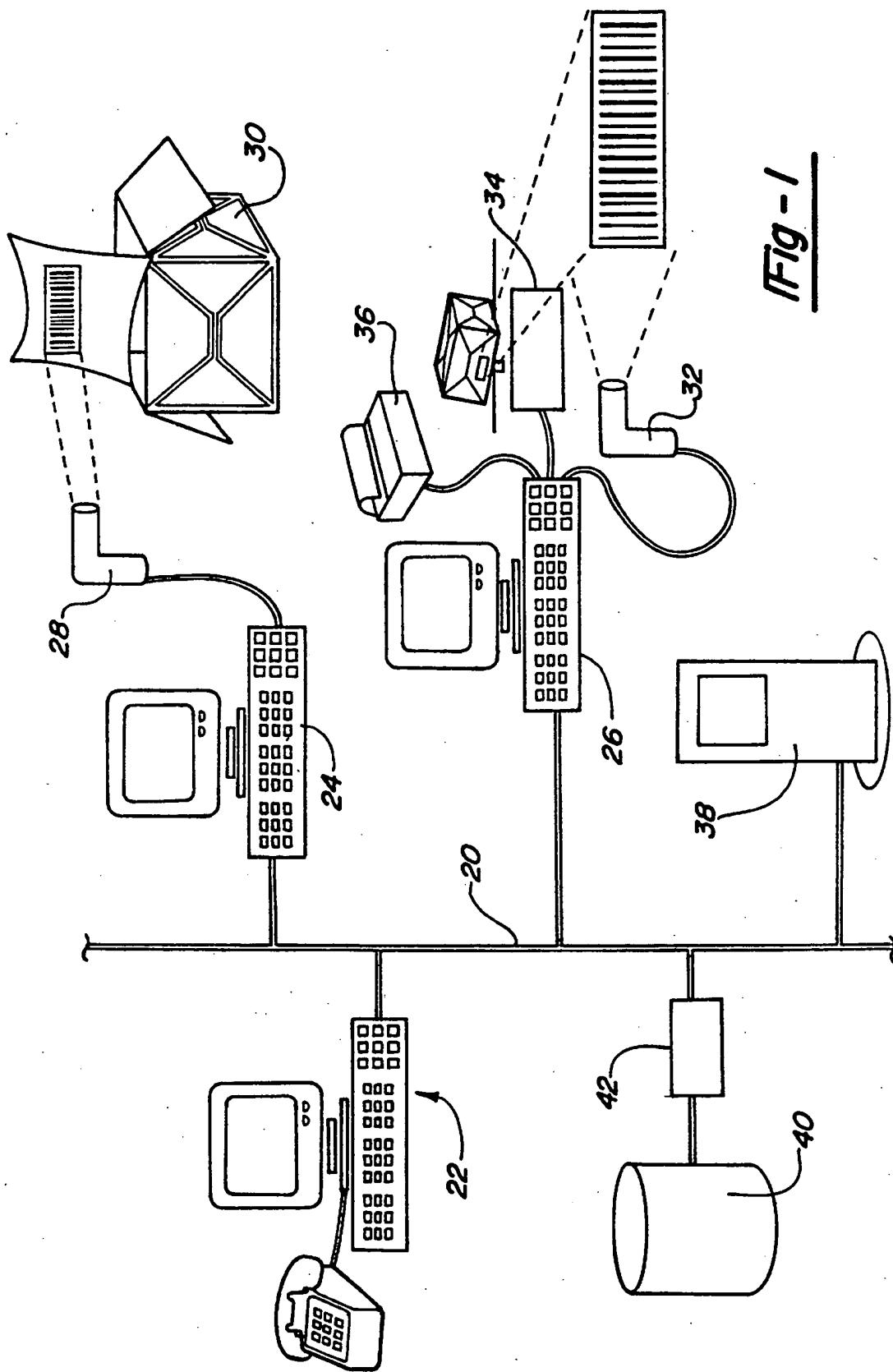
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ABSTRACT

The various transportation logistics tasks, such as order processing, order fulfillment, transportation of goods and tracking, are assigned to individual client/server objects which make up the building blocks of the computerized logistics management system. A tokenized message handling scheme allows client and server objects to share information, even where the respective data types do not match. An external processing manager provides script handling services to other client applications, allowing those applications to modify the performance of other program objects and to communicate with the outside world.

8 Claims, 18 Drawing Sheets





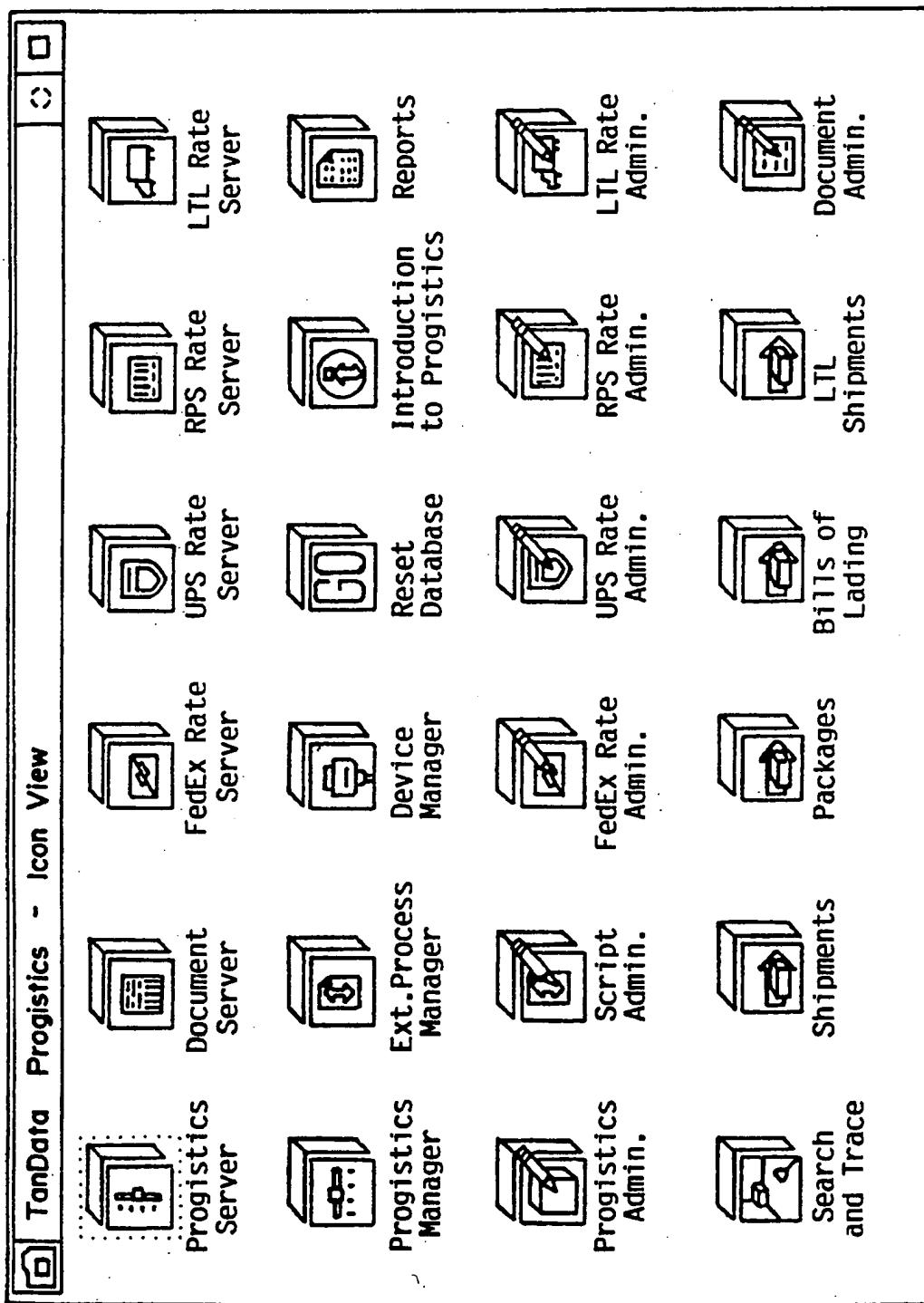


Fig - 2

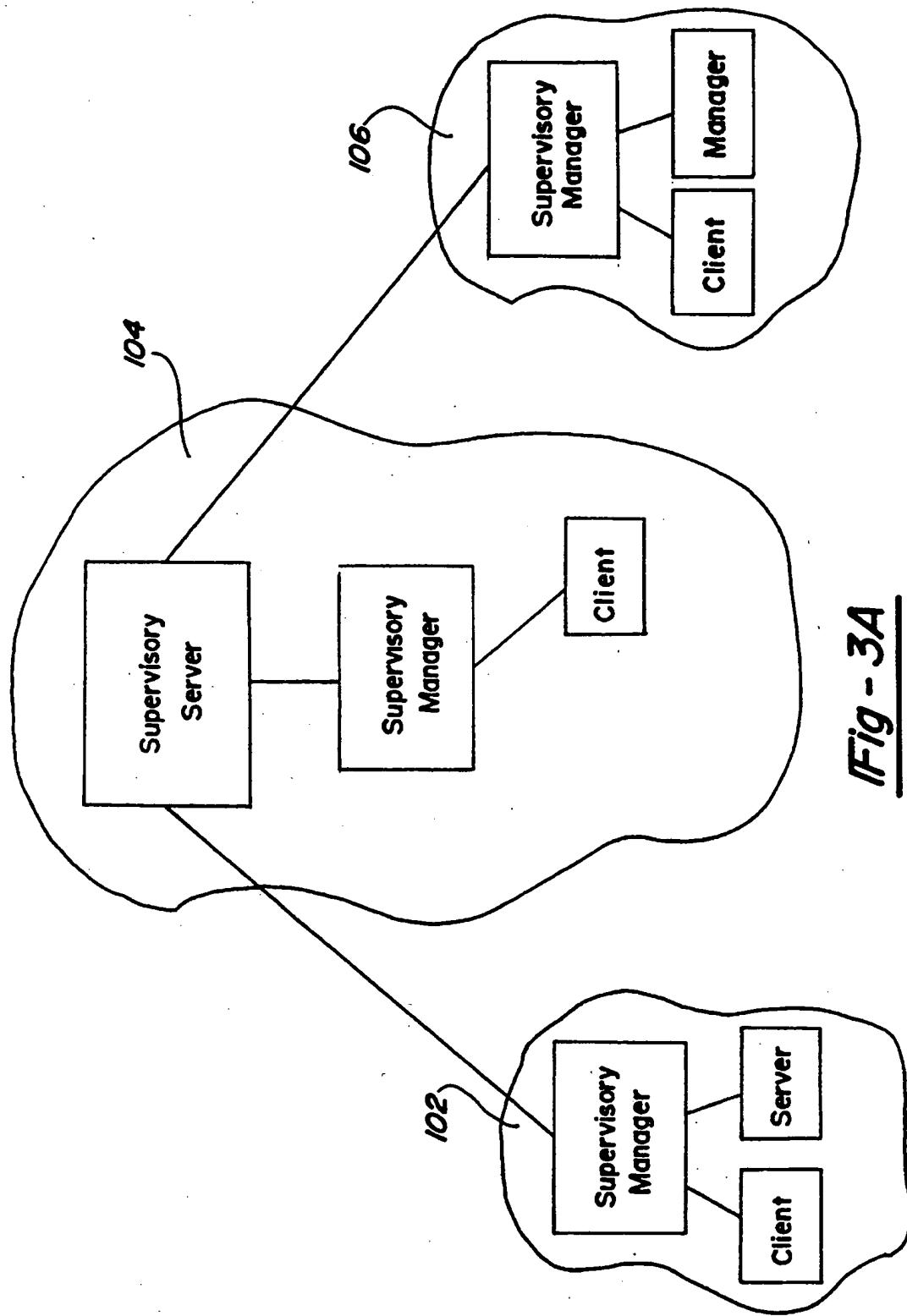
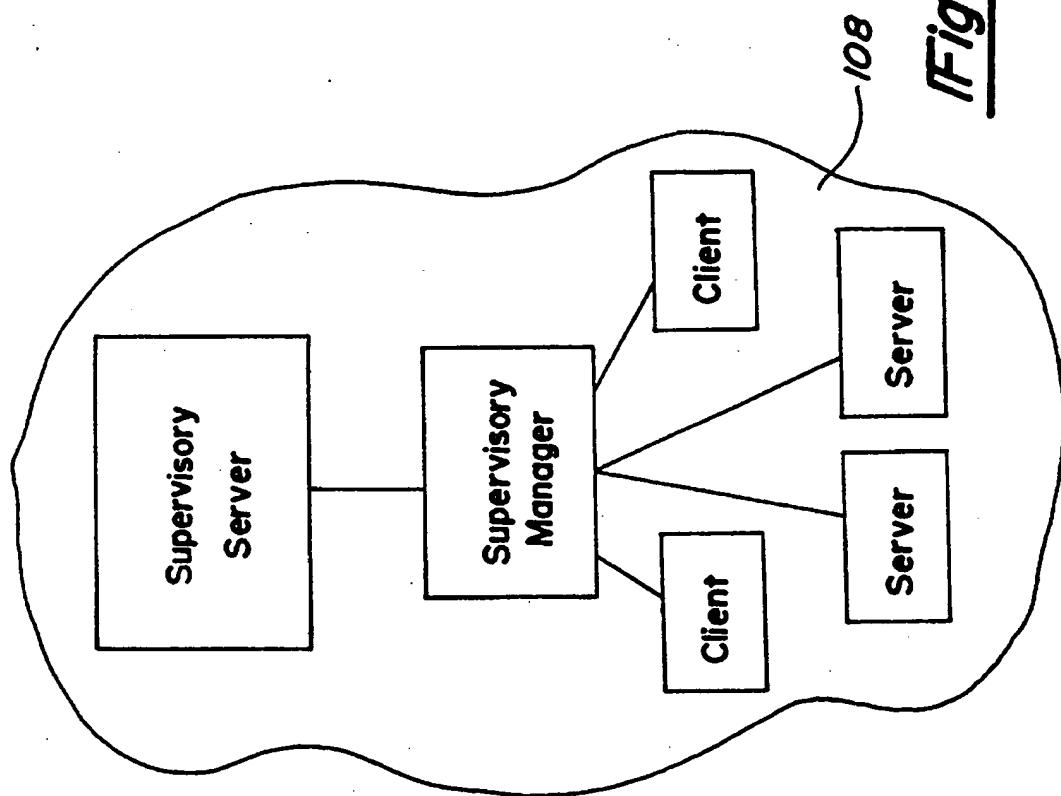


Fig - 3A

Fig - 3B



<input checked="" type="checkbox"/> Progistics	<input type="checkbox"/> Shipments	<input type="checkbox"/> Shipments	<input type="checkbox"/> Packages	<input type="checkbox"/> Data	<input type="checkbox"/> Configuration	<input type="checkbox"/> Help
Shipments						
Shipper	Service	...	Consignee
Reference S	Zip Code	00000	Commitment
Terms						
Packages						
Reference S	Weight	0 lbs 0.0 oz	Dimensions	0x0x0	Packaging	LTL Item No.
Delivery Options						
<input type="checkbox"/> C.O.D. <input type="checkbox"/> Shipment <input type="checkbox"/> Saturday Del.						
Ship Date : 09 - 14 - 1995						
<input type="checkbox"/> F1 Q <input type="checkbox"/> F2 Browse <input type="checkbox"/> F3 Load <input type="checkbox"/> F4 Create Release <input type="checkbox"/> F5 Rate <input type="checkbox"/> F6 F7 Delete <input type="checkbox"/> F8 F9 F10 Examine <input type="checkbox"/> F11 Next <input type="checkbox"/> F12 Add <input type="checkbox"/> F13 Repeat <input type="checkbox"/> F14 - F18 Void						
New shipment						
Special Services						
<input type="checkbox"/> C.O.D. <input type="checkbox"/> Package <input type="checkbox"/> Proof of Del. <input type="checkbox"/> Declared Value <input type="checkbox"/> Oversize <input type="checkbox"/> Hazardous <input type="checkbox"/> Tracking						
<input type="checkbox"/> F1 Q <input type="checkbox"/> F2 Browse <input type="checkbox"/> F3 Load <input type="checkbox"/> F4 Create Release <input type="checkbox"/> F5 Rate <input type="checkbox"/> F6 F7 Delete <input type="checkbox"/> F8 F9 F10 Examine <input type="checkbox"/> F11 Next <input type="checkbox"/> F12 Add <input type="checkbox"/> F13 Repeat <input type="checkbox"/> F14 - F18 Void						
New package (O) in shipment						

Fig - 4A

Proistics Packages Data Configuration Help	
Package	
Shipper	<input type="text"/>
Consignee	<input type="text"/>
Reference #	<input type="text"/> ...
Zip Code	<input type="text"/> 00000
Service	<input type="text"/>
Weight	<input type="text"/> 0 1bs 0.0 oz
Dimensions	<input type="text"/> 0x0x0
Packaging	<input type="text"/>
Terms	<input type="text"/>
Commitment	<input type="text"/>
LTL Item #	<input type="text"/> ...
Ship Date: 09-14-1993 <input type="checkbox"/> Hundredweight Labels	
<input type="checkbox"/> F3 Create <input type="checkbox"/> F4 Load	
<input type="checkbox"/> F12 Ship	
<input type="checkbox"/> F11 Repeat	
<input type="checkbox"/> F9 Rate	
<input type="checkbox"/> F8 Void	
<input type="checkbox"/> Ctrl-M Multi	
<input type="checkbox"/> F2 Browse	
<input type="checkbox"/> F10 Examine	
<input type="checkbox"/> New package	
<input type="checkbox"/> F11 Search	
<input type="checkbox"/> F10 Exit	

Fig - 4B

/* Example Script to reset Commitment based on Service */

```
IMPORT CONSIGNEE_CODE
IF CONSIGNEE_CODE = 3345 THEN DO
  SERVICE = UPS.2ND
  COMMITMENT = TWODAY_12_00_NOON
END
EXPORT "SERVICE COMMITMENT"
```

Script loaded successfully

Fig - 4C

UPS Rate Adjustments

Adjust by — Zone Country Postal Code

Destination Range —
Start End

Weight Range —
Minimum Weight
Maximum Weight

Adjustment —
 Percent Fixed Value
 Apply to Special Service Fees
Amount

Services
UPS Ground
UPS Next Day Air
UPS 2nd Day Air
UPS 3-Day Select

Add Delete

Name

OK Cancel Help

Edit rate discount...

Fig - 4D

<input type="checkbox"/> Serial Port 2 Configuration	
Baud Rate:	<input type="text" value="9600"/> <input type="button" value="..."/>
Parity	
<input checked="" type="radio"/> None	<input type="radio"/> Even
<input type="radio"/> Mark (1)	<input type="radio"/> Space (0)
Data Bits	
<input type="radio"/> 5	<input type="radio"/> 6
<input type="radio"/> 7	<input type="radio"/> 8
Stop Bits	
<input checked="" type="radio"/> 1	<input type="radio"/> 1.5
<input type="radio"/> 2	
XON / XOFF Flow Control	
<input type="checkbox"/> Transmit	<input type="checkbox"/> Receive
XON Char.:	<input type="text" value="17"/>
XOFF Char.:	<input type="text" value="19"/>
Hardware Flow Control	
<input type="checkbox"/> CTS Output	<input type="checkbox"/> DSR Output
DTR	<input checked="" type="radio"/> off <input type="radio"/> On <input type="radio"/> Handshake
RTS	
<input checked="" type="radio"/> Off	<input type="radio"/> On <input type="radio"/> Handshake
Timeouts	
Read:	<input type="text" value="5"/> Write: <input type="text" value="5"/>
values are tenths of seconds	
<input type="button" value="Test..."/>	
<input type="button" value="Cancel"/>	
<input type="button" value="Defaults"/>	
<input type="button" value="Save"/>	

Fig - 4E

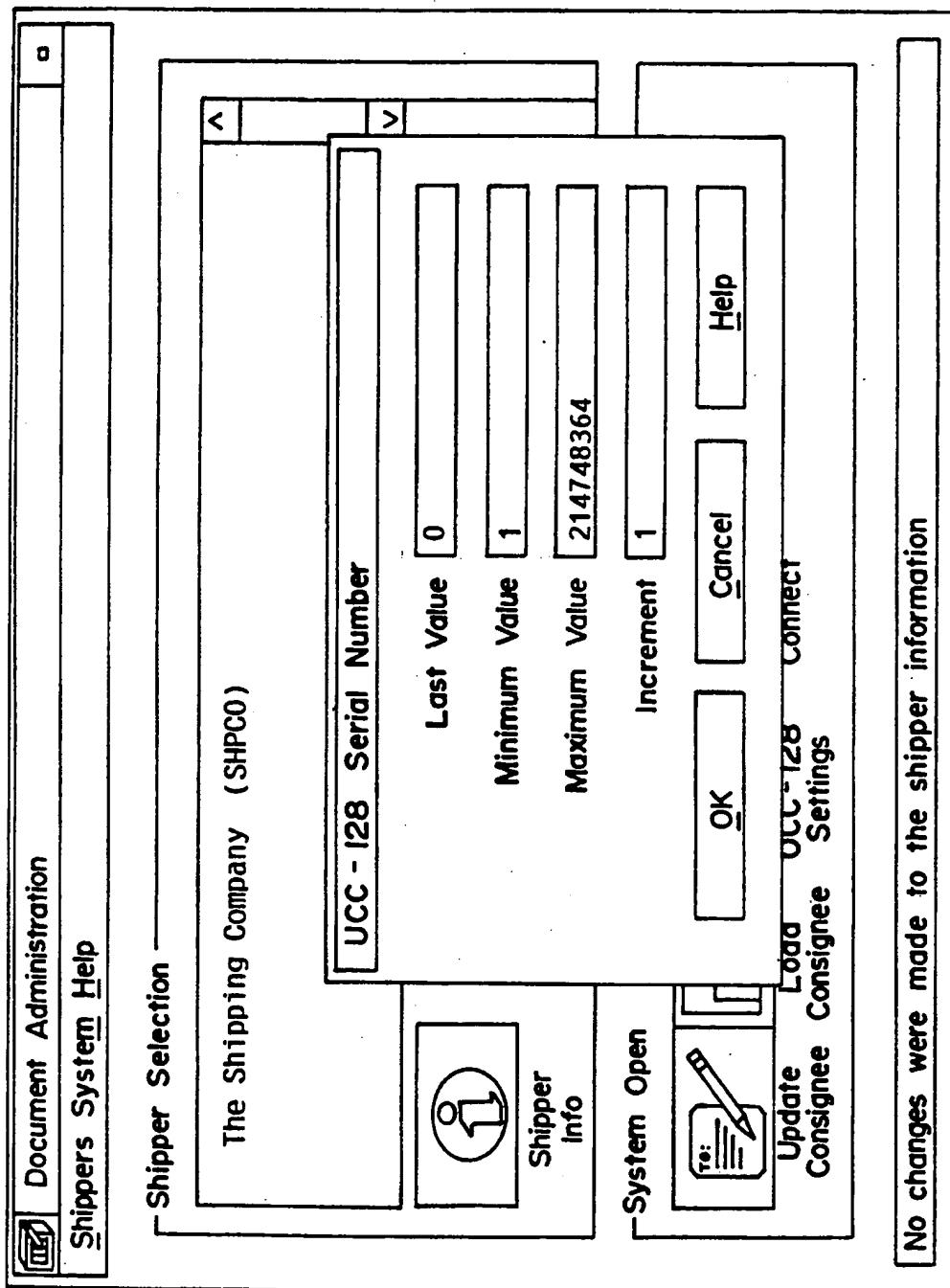


Fig - 4F

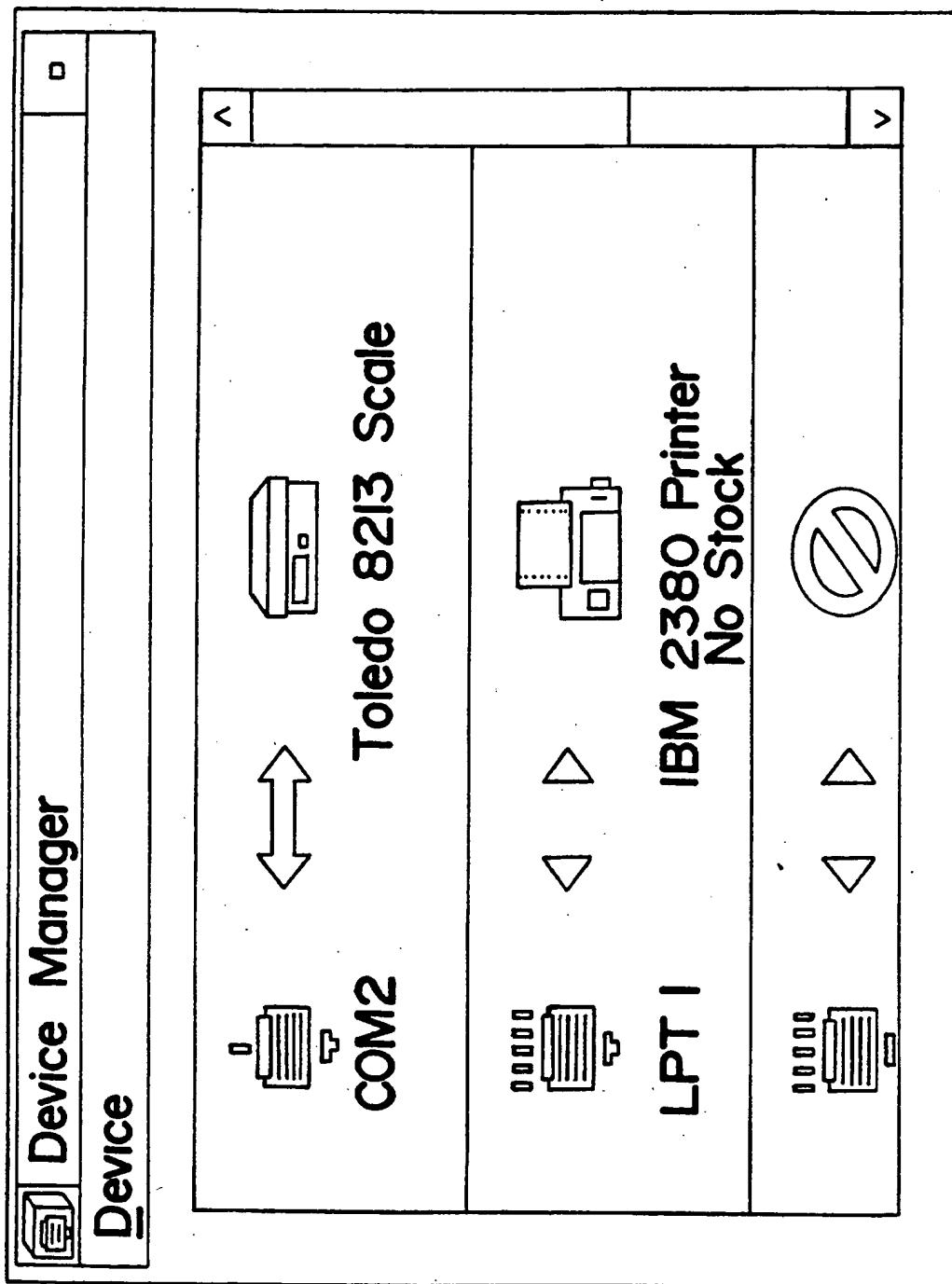


Fig - 4G

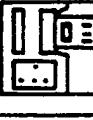
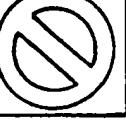
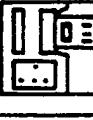
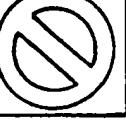
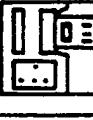
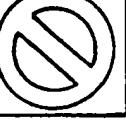
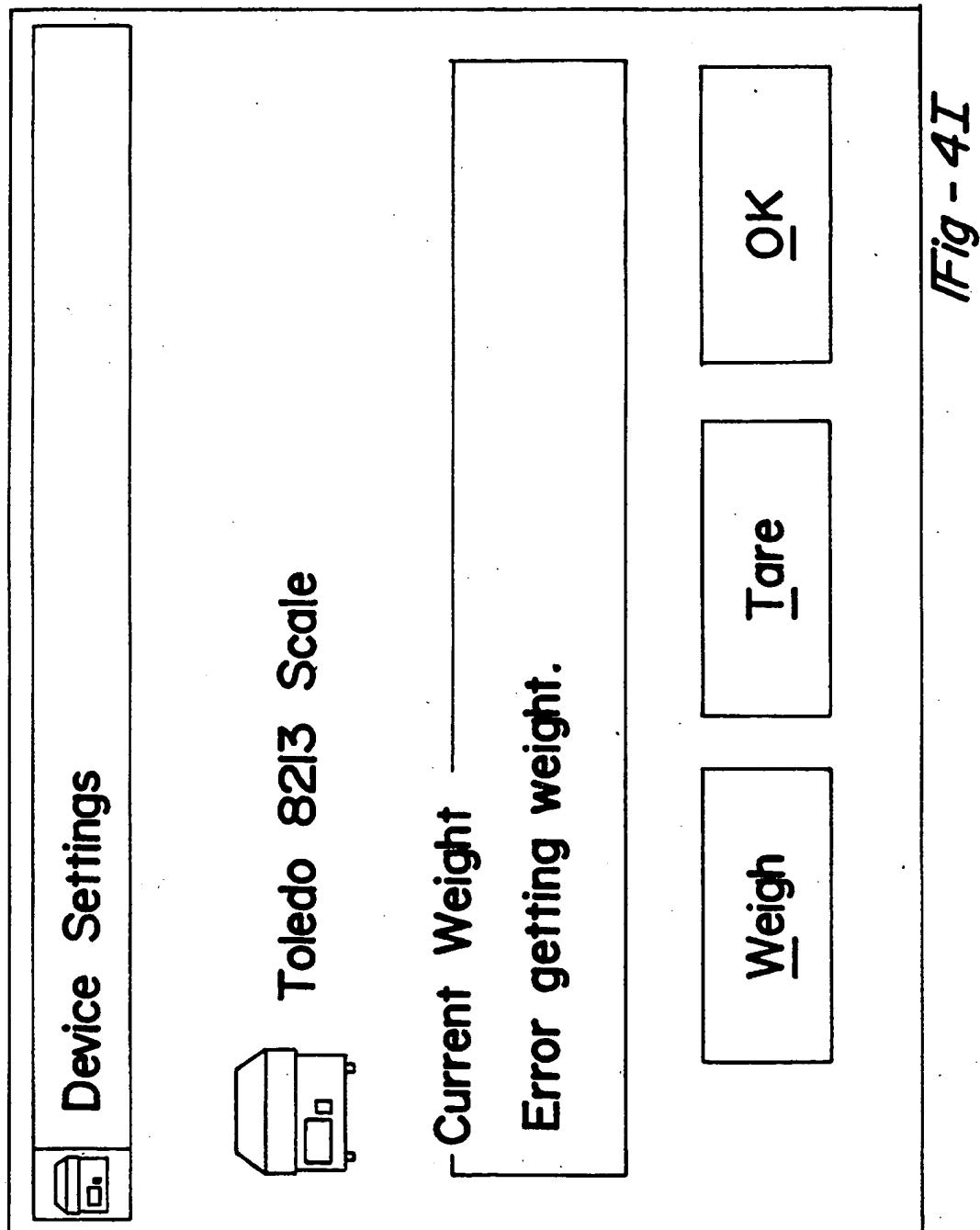
<input type="checkbox"/> Device Selection						
Select a Device:						
<table border="1"><tr><td><input type="checkbox"/> NCI 1155 Label Printer </td><td><input type="checkbox"/> SPLC 150 Scale </td></tr><tr><td><input type="checkbox"/> Toledo 8213 Scale </td><td><input type="checkbox"/> Unimark U501 Printer </td></tr><tr><td colspan="2"><input type="checkbox"/> No Device </td></tr></table>	<input type="checkbox"/> NCI 1155 Label Printer 	<input type="checkbox"/> SPLC 150 Scale 	<input type="checkbox"/> Toledo 8213 Scale 	<input type="checkbox"/> Unimark U501 Printer 	<input type="checkbox"/> No Device 	
<input type="checkbox"/> NCI 1155 Label Printer 	<input type="checkbox"/> SPLC 150 Scale 					
<input type="checkbox"/> Toledo 8213 Scale 	<input type="checkbox"/> Unimark U501 Printer 					
<input type="checkbox"/> No Device 						
<input type="button" value="Cancel"/>	<input type="button" value="OK"/>					

Fig - 4H



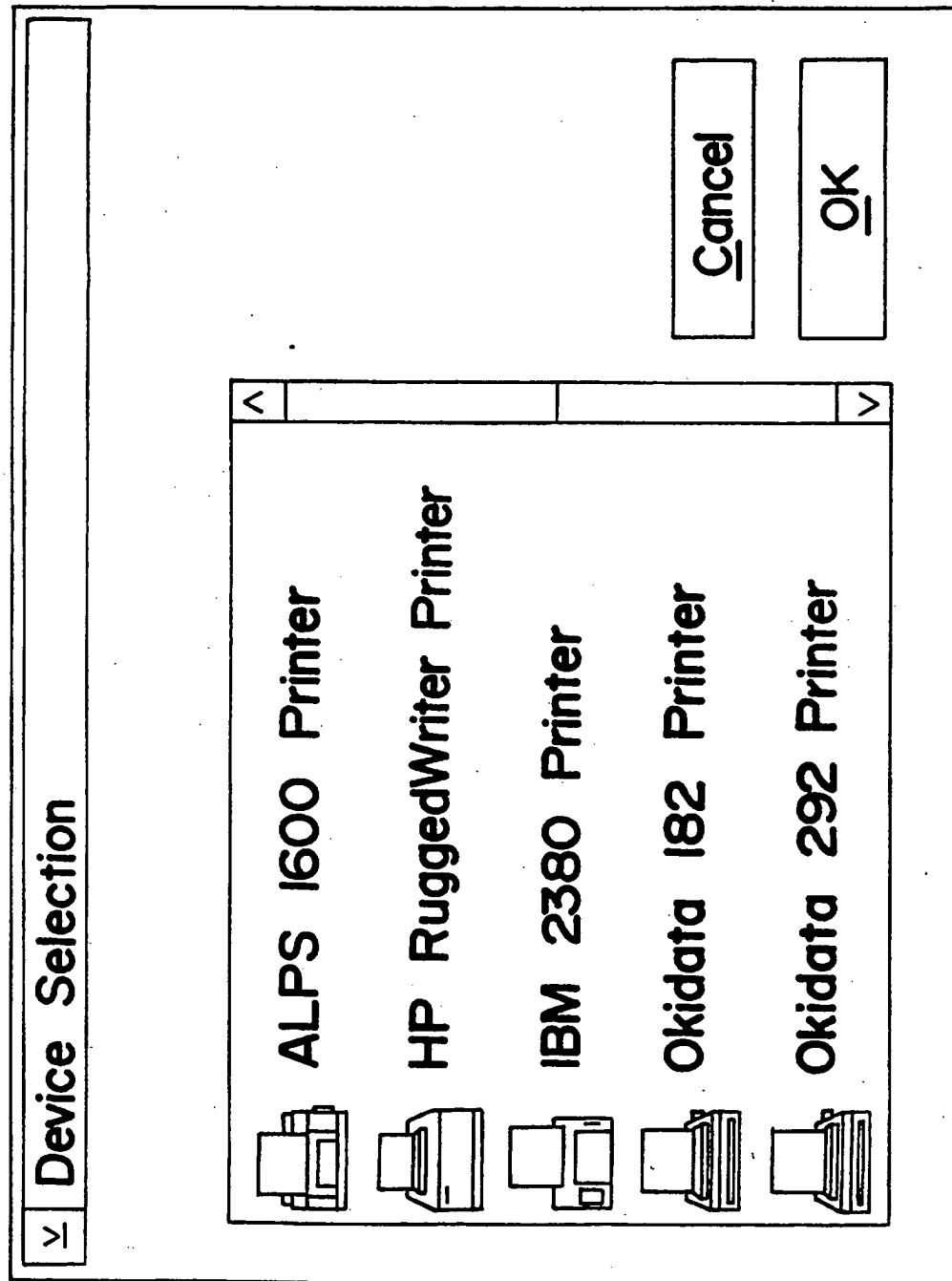


Fig - 4J

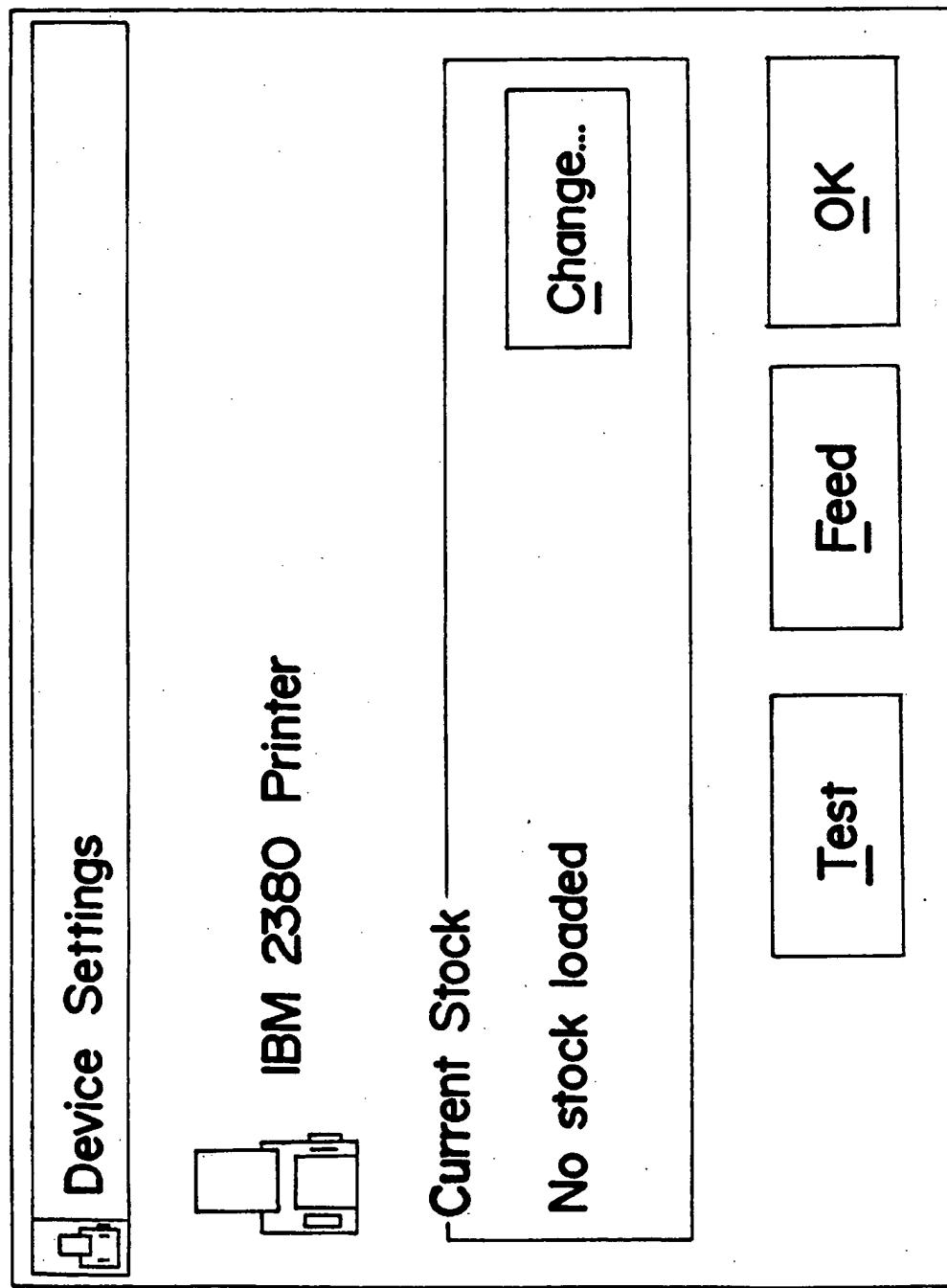


Fig - 4K

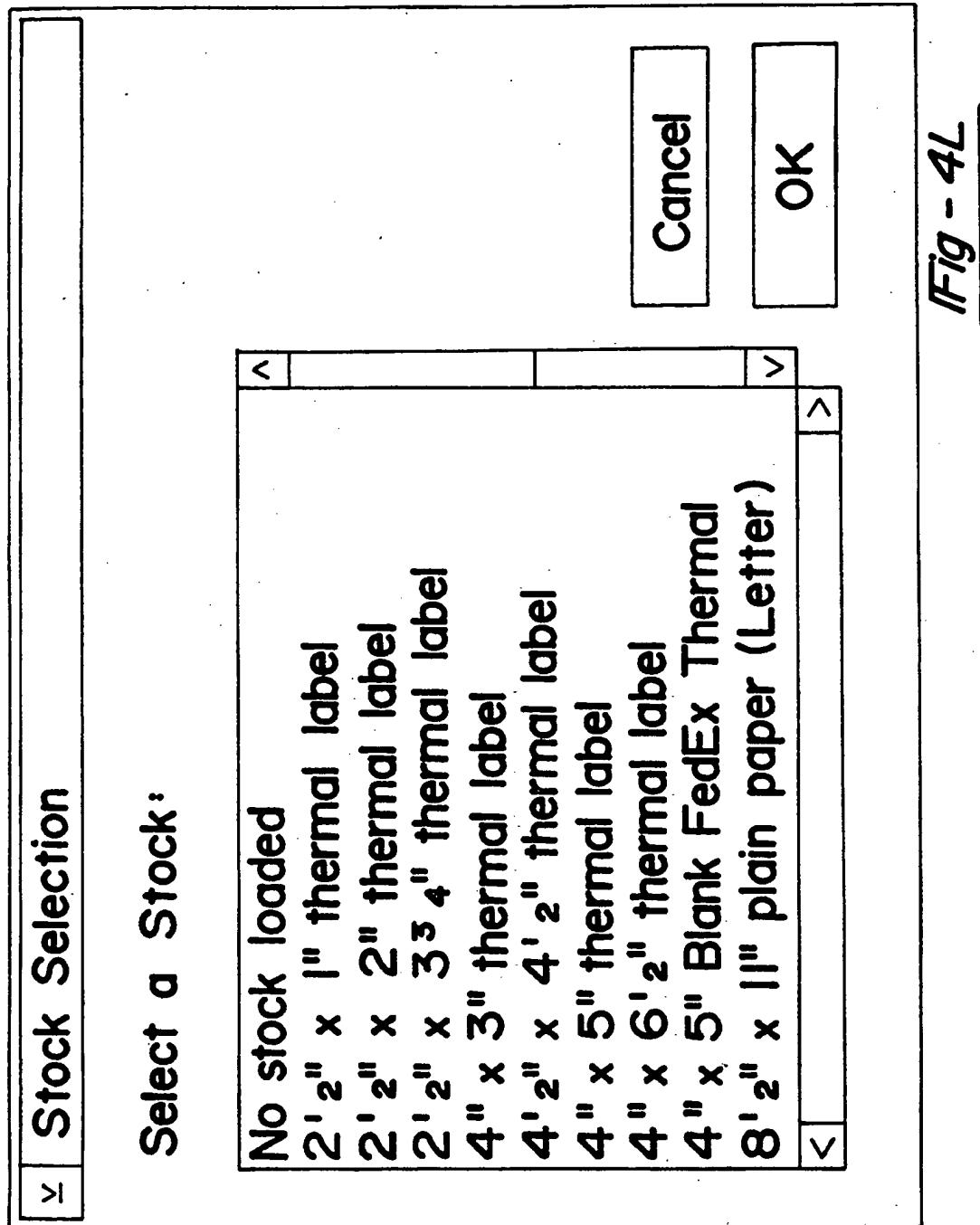
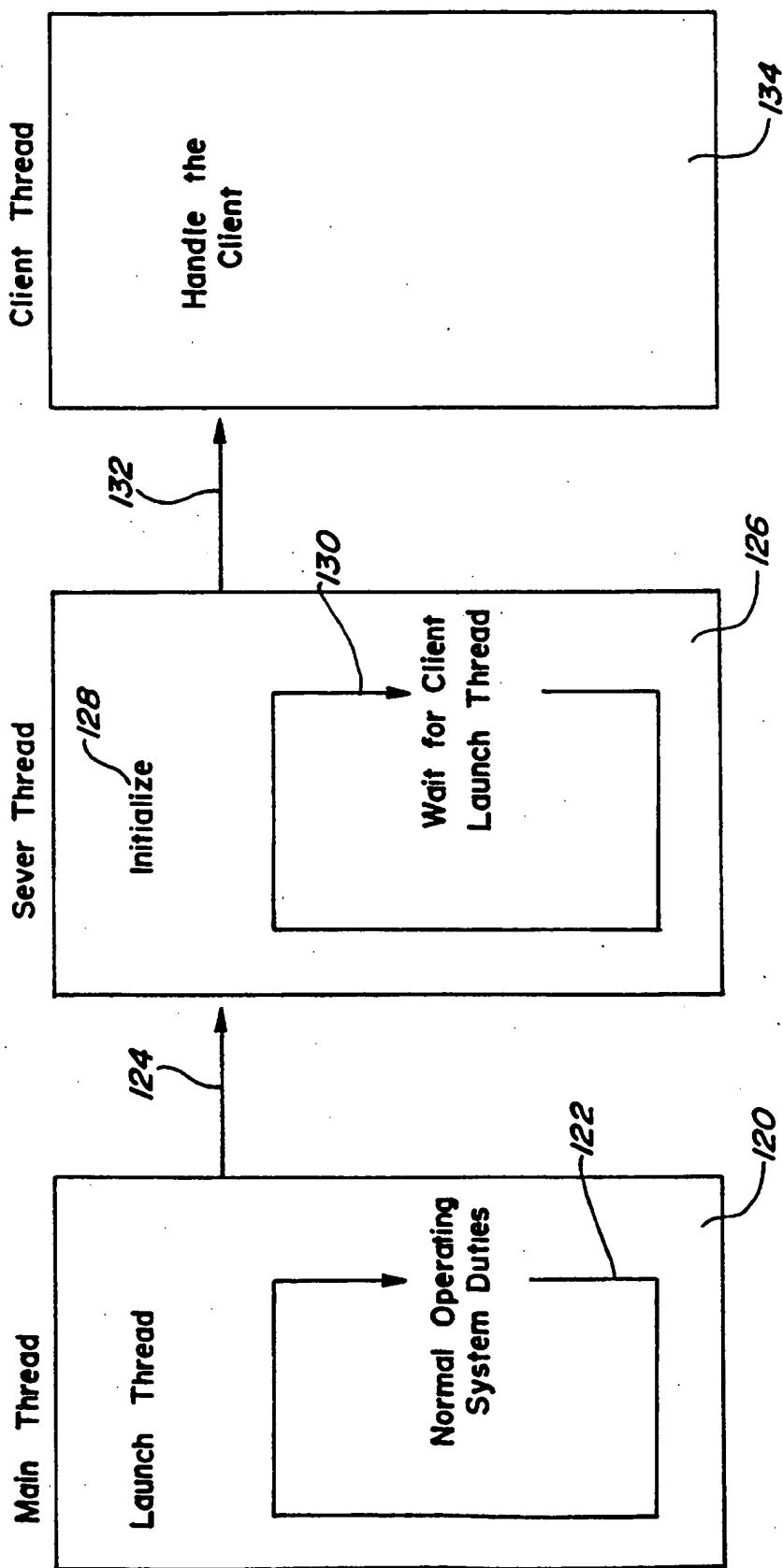
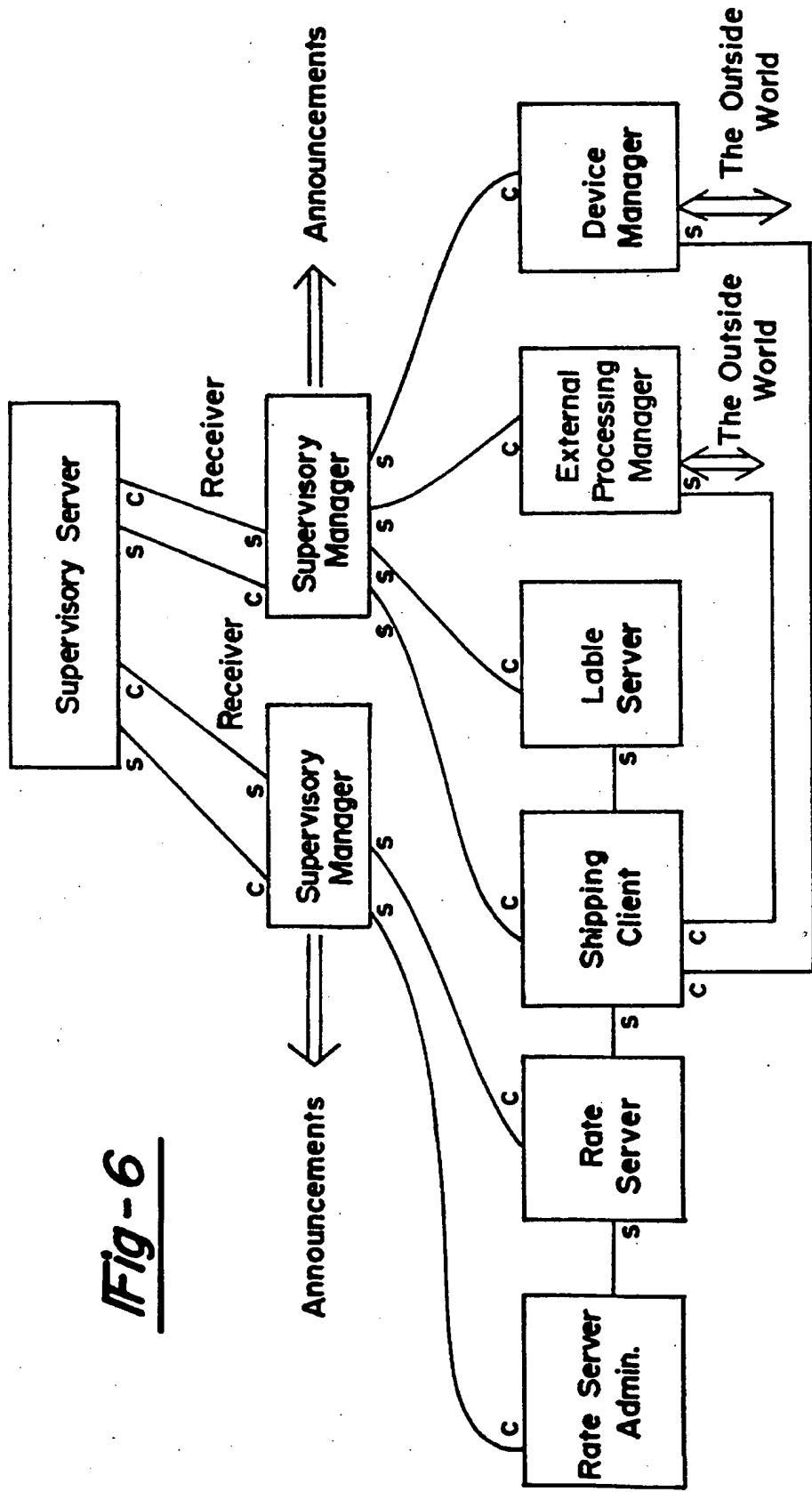


Fig - 5



LOGISTICS SYSTEM FOR AUTOMATING TRANSPORTATION OF GOODS

BACKGROUND OF THE INVENTION

The present invention relates generally to computerized systems for expediting the shipping of goods in commerce. More particularly, the invention relates to a computerized logistics system for managing and integrating various aspects of order processing, order fulfillment and goods transportation and tracking.

In the past, computerized systems for expediting the shipping of goods have fallen into two rather diverse categories. At the low cost end of the spectrum have been the standalone postage meters and mail manifest systems used by small businesses to automate the package weighing and carrier manifest printing functions. At the other end of the spectrum are the mainframe computer-based systems employed by large nationwide mail order merchandisers. At both ends of the spectrum the systems have had a number of limitations.

The standalone mail manifesting systems are limited in that they are designed to automate only the shipping functions such as printing mailing label and mailing manifest by the shipping clerk or shipping department. As such, the conventional standalone system was not integrated with the customer order department or with the order fulfillment and order packaging departments. Hence, conventional standalone systems have lacked the ability to take order size, package size or time in transit into account when selecting the least cost carrier.

Large mainframe order processing systems are also limited. Due to the complexity of mainframe computer architecture and associated software systems, it is not practical to use these solutions in the small or moderate sized business environment. Mainframe-based systems often require years to develop and to customize for a particular organization's needs. Thereafter, large data processing departments are needed to maintain the system and keep it operational.

SUMMARY OF THE INVENTION

The present invention provides a high-performance, cost-effective logistics system which is readily adaptable to a wide variety of different organizations. The system is suitable for deployment on a single, standalone computer or on a computerized network comprising many computers. Among the advantages of the present system are (1) substantial reduction in freight costs; (2) a major increase in fulfillment accuracy; (3) convenient order tracking to facilitate warranty, lot and serial number tracking; (4) improved customer service; (5) a readily customizable system which can be adapted to virtually any shipping operation; (6) a robust system having a long useful life; (7) graphical user interface screens for easy training and use; and (8) greatly reduced implementation costs in a system with increased effectiveness.

As more fully described herein, the logistics management system of the invention facilitates the process of shipping goods by a shipper having a predefined set of shipping requirements via a carrier having a predefined rate structure. The system employs a multitasking operating system environment for running a plurality of computer processes substantially simultaneously. The environment has a means for interprocess communication whereby messages may be passed between the computer processes. A supervisory server, running in the operating system environment, pro-

vides registration services to connect one or more computer processes to the interprocess communication mechanism. The system further employs at least one rate server, also running in the operating system environment, substantially simultaneously with the supervisory server. The rate server or servers provide access to carrier rate structure data and also provide predefined data processing services using the carrier rate structure data in response to a predefined set of request messages. The predefined data processing services include the providing of response messages based at least in part on the carrier rate structure data. More specifically, the rate server or servers have registration means for communicating with the supervisory server to invoke the registration services of the supervisory server and thereby establish a connection to the interprocess communication means. In the presently preferred embodiment there is one rate server for each carrier (e.g., U.S. Postal Service, Federal Express, United Parcel Service, etc.) and these servers are provided with a complete knowledge base of all rate structure data and shipping rules and regulations pertaining to that carrier.

In addition to the supervisory server and one or more rate servers, the logistics management system also includes at least one client process running in the operating system environment substantially simultaneously with the supervisory server and also with the rate server or servers. The client process has a user interface for collecting input information from a user about a desired operation and for providing output information. More specifically, the client process also has registration means for communicating with the supervisory server, to invoke the registration services of the supervisory server, and thereby establish a connection to the interprocess communication means. The client process has a preprogrammed set of rules which are reflective of a given shipper's predefined set of shipping requirements. The client process also has a processing means for using the preprogrammed set of rules and using at least a portion of the input information to issue request messages to one or more rate servers and to interpret response messages received from the rate servers in order to provide the output information. In the presently preferred embodiment the client process is preprogrammed with a knowledge base to reflect the shipping organization's rules, regulations and practices. In this way, the client process presents a familiar view of day-to-day operations, as seen by the organization's personnel who are responsible for taking orders, packaging goods and shipping goods to customers. Because the sometimes complex rules and regulations of the carriers are fully handled by the rate servers, users interacting with the client process do not need to have a full and complete understanding of the carrier's rules and regulations in order to properly ship goods in a cost-effective and timely manner.

As more fully set forth herein, the supervisory server, the rate server or servers and the client process or processes are interoperable through the interprocess communication means (a) to receive input information from a user via the user interface of the client process, (b) to use the input information to issue a request message to the rate server via the interprocess communication means, (c) to process the issued request message and thereby cause a response message to be generated by the rate server, (d) to send the response message to the client process via the interprocess communication means, and (e) to provide output information based on the response message. The output information can range from simply displaying information on a screen to the user, to printing a mailing label or manifest or to updating records in a company database.

For a more complete understanding of the invention, its objects and advantages, reference may be had to the following specification and to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 illustrates an example application in which the logistics management system of the invention may be implemented;

FIG. 2 is an icon view of the plurality of program objects which comprise a presently preferred embodiment of the logistics management system;

FIG. 3A is a block diagram depicting a distributed architecture embodiment of the invention;

FIG. 3B is a block diagram illustrating a single, stand-alone CPU embodiment of the invention;

FIGS. 4A-4L, inclusive, represent exemplary user interface screens of the presently preferred embodiment;

FIG. 5 is a block diagram illustrating the presently preferred mechanism for implementing the client/server architecture, illustrating how multiple threads operate in the presently preferred embodiment;

FIG. 6 is a block diagram illustrating the presently preferred tree-structured client/server communications mechanism.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The logistics system of the invention serves as a management tool for the automated order processing, packaging, slipping and transportation of goods. The system is highly flexible and adaptable and thus the invention can be implemented in many forms. Therefore, in order to illustrate the principles of the invention an exemplary order processing, packaging and shipping operation will be illustrated and described. It will be understood that the invention provides a collection of building blocks or program objects which can be assembled in a variety of different ways to easily construct a logistics management system for practically any application.

Referring to FIG. 1, an exemplary application is illustrated. In FIG. 1, a networked architecture is illustrated in which a plurality of computers are interconnected by a local area network bus 20. Of course, the number of computers and the network architecture utilized are matters of design choice. The invention is not restricted in this regard and will operate on systems as small as a single standalone computer and as large as a global-wide area network.

FIG. 1 illustrates a simple system which includes an order processing station 22, a packaging station 24 and a shipping station 26. The order processing station might ordinarily include one or more computer terminals through which order entry personnel input a customer's order. The order entry terminal may be integrated with a point-of-sale terminal or cash register or it may be associated with or connected with a telephone system through which customer orders are placed. In this regard, while most order entry terminals are designed to be operated by an order processing clerk, direct order entry by the customer via computerized telecommunications equipment is also envisioned.

The order packaging station may also comprise one or more computer terminals to which a bar code scanning device 28 may be optionally attached. The scanning device would be used, for example, to scan the universal product code (UPC) of each item as it is picked from the warehouse shelves and placed into the shipping container 30.

The shipping station 26 similarly may include one or more computer terminals to which a scanning device 32, electronic scale 34 and mailing label printers 36 may be

attached. Preferably, the printers are capable of printing the necessary shipping documents, bills of lading, manifests and so forth, as well as the appropriate package labeling. If desired in the alternative, the package label may be pre-printed (e.g. at the packing station) and the scanning device 32 may be used to read the label and thereby automatically enter the package identifying number into the system.

The logistics management system of the invention may be implemented in software and run from a variety of different computer platforms. Preferably, at least portions of the logistics management software are installed and run on each of the computer terminals illustrated in FIG. 1. In addition, the logistics management system software may also be installed and run on other computers attached to the network, such as computer 38. As will be more fully described below, the logistics management system is also capable of interfacing with non-native computer systems, e.g., previously existing company database systems, via an external processing management system. To illustrate this, an external database 40 is depicted in FIG. 1. The database may be resident, for example, on a mini-computer or mainframe computer used to store company financial records. If necessary, the external database system may be connected via a gateway 42 to the local area network bus 20.

25

Client/Server Architecture

The presently preferred logistics management system is implemented using a client/server architecture and a multitasking operating system. Although the presently preferred system runs under the OS/2 operating system, use of OS/2 is not a requirement. Any multitasking operating system can be used. A multitasking operating system was selected for the preferred embodiment because it permits multiple processes (and multiple threads) to run effectively simultaneously. The multitasking operating system thus allows multiple programs to run effectively simultaneously and to communicate with each other through an interprocess communications (IPC) mechanism.

One benefit of the multitasking operating system is that the present invention allows the logistics management task to be split into multiple pieces. This architecture is quite advantageous since it allows updates or changes to be effected with respect to part of the system without affecting the rest of the system. The client/server architecture derives benefit from the multitasking operating system by allowing the overall logistics management task to be subdivided along functional lines. As will be more fully explained below, the presently preferred embodiment places carrier-related information, such as shipping rates, shipping rules, time in transit information and the like in one or more rate servers. These servers are responsible for making all determinations regarding how a given carrier's rules and rate structures are to be interpreted. The presently preferred embodiment facilitates the particular Shipper's requirements, such as order taking, order fulfillment, inventory control and the like, in one or more client applications. These client applications may be customized to conform quite closely to a given shipper's operation. These client applications call upon the necessary rate servers, as needed, for the appropriate shipping rates and shipping requirements of the selected carrier.

The multitasking operating system and the client/server architecture of the preferred embodiment comprises the logical structure of the logistics management system. The physical structure, i.e., how many computers are used and how those computers are interconnected, can vary widely

and still implement the above-described logical client/server architecture. More specifically, the preferred embodiment is constructed to support distributed applications in which different pieces of the total client/server structure are run on multiple machines interconnected together via a network. In general, there is no limitation on how the respective client/server components are to be distributed across the network. Thus, for example, in the system illustrated in FIG. 1, any of the computer terminals associated with stations 22, 24 and 26, as well as computer 38, may host one or more client applications and one or more server applications.

The present invention uses a plurality of program building blocks or program objects, each having a specific function within the overall client/server architecture. The building blocks or program objects which make up the presently preferred embodiment are illustrated collectively in FIG. 2. FIG. 2 is illustrated in the form of a window or folder 50 containing a plurality of icons, each representing one of the program objects which make up the preferred embodiment. A brief description of each of these objects is presented below. Further details of the manner in which these objects communicate with one another and further details of the objects construction will be presented thereafter.

The Presently Preferred Program Objects

The presently preferred program objects are described in Table I below. Broadly speaking, these objects can be classified as being client objects or server objects. For example, the objects bearing the designation "server" or "manager" function as server objects. The objects designated as "client" or "administration" (admin) function as client objects.

More specifically, servers such as rate servers encode the knowledge required to answer questions such as how to calculate shipment rates or how to band shipments. Thus, rate servers provide the knowledge regarding a specific carrier's requirements. Typically, rate servers are provided with specific details regarding a given shipment's weight or the required delivery date by a client application. Also typically, rate servers do not have user interface screens. Servers simply appear as icons on the user's desktop and wait to be asked a question by a client. Provided the question includes the right details, the server will then return the correct answer to the client. Servers can reside anywhere on a network, so they may not necessarily be visible as icons on a particular user's computer screen.

Clients are principally responsible for asking specific questions of the servers. Clients have responsibility for gathering and displaying information. As such, clients usually have user interface screens through which a user can enter data or input data through an attached scanning device.

Manager objects are principally responsible for managing aspects of the logistics management system, such as the communication between clients and servers, or communication with printers, scanners and the like. Administration objects are principally responsible for providing a user interface mechanism whereby the user may edit system settings and scripts.

TABLE I-continued

Program Object	Function
FedEx Rate Server:	non-carrier document formats and the printing of those documents. Manages the Federal Express rates, carrier rules and documentation requirements.
UPS Rater Server:	Manages the UPS rates, carrier rules and documentation requirements.
RPS Rate Server:	Manages the RPS rates, carrier rules and documentation requirements.
LTL Rate Server:	Manages the LTL rates, carrier rules and documentation requirements.
Supervisory Manager:	Acts as a repository for machine-specific information.
Ext. Process Manager:	Manages the client requests for access to outside services such as remote databases and remote computers.
Device Manager:	Manages the client requests for access to outside devices such as printers, scanners, and scales.
Reset Database:	Resets the sample database to its default values to facilitate training exercises.
Introduction to the system:	A tutorial for the new user.
Reports:	Double-clicking this icon will run a third party report generator program.
Supervisory Administration:	Allows the user to edit system settings, manage shipper information and allows users to send messages to other computers.
Script Administration:	Allows the user to create and edit scripts used by the External Processing Manager.
FedEx Administration:	Allows the user to configure the Federal Express Server settings such as account numbers, EDI settings and to close out the manifests.
UPS Rate Administration:	Allows the user to configure the UPS Server settings such as account numbers, rates, discounts and to close out the manifests.
RPS Administration:	Allows the user to configure the RPS Server settings such as account numbers, rates, discounts and to close out the manifests.
LTL Administration:	Allows the user to configure the LTL Server settings such as account numbers, and rates, discounts and to close out.
Search and Trace:	A client application which allows the user to search and trace specific packages, shipments and orders.
Shipments:	A client application which allows the user to process shipments comprised of multiple packages per order.
Packages:	A client application which allows the user to process shipments comprised typically of one package per order.
Bills of Lading:	Allows the user to create bills of lading for LTL Motor Freight Shipments.
LTL Shipments:	Allows the user to create and rate bills of lading for LTL Motor Freight Shipments.
Document Administration:	Allows the user to configure the Document Server with UCC-128 serial number information and document attributes.

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In an actual implementation of the system, one supervisory server and at least one supervisory manager would be provided. Specifically, one (and only one) supervisory server is provided for the entire network. In addition, one supervisory manager is provided for each CPU that will be running client or server applications on the network. This is illustrated in FIG. 3A, which depicts a distributed architec-

TABLE I

Program Object	Function
Supervisory Server:	Acts as a repository for system wide information.
Document Server:	Manages the client requests for

ture employing three networked CPUs 102, 104 and 106. As illustrated, the supervisory server and one supervisory manager are running on CPU 104. Supervisory managers are also running on CPUs 102 and 106. For illustration purposes a UPS rate server object and a UPS rate administration object are also running on CPU 102; whereas a shipments client and a device manager are running on CPU 106. Thus, FIG. 3A represents one possible configuration assembled from the collection of presently preferred program objects.

Although multiple CPU, distributed architecture installations represent a powerful configuration, it is possible to implement the invention on a single, standalone, CPU. This is illustrated in FIG. 3B, in which a standalone CPU is indicated at 108. As illustrated, this simple configuration includes a supervisory server and supervisory manager, along with any other program objects which may be required for the task being performed. Thus, in the example illustrated in FIG. 3B several rate servers and a packages client have been illustrated.

Application User Interface

Referring to FIGS. 4A-4L, the presently preferred user interface will now be described. In general, the client/server program objects, illustrated as icons in FIG. 2, may each have a user interface in the form of a screen or window through which the user can enter information, make command selections, and look up information. In practice, the user interface may vary in appearance and function, as dictated by the particular task to be performed. Thus the user interface screens illustrated in FIGS. 4A-4L are intended merely as examples in accordance with the presently preferred embodiment.

Overall Icon View—System Folder

The presently preferred embodiment places icons for all user-selectable program objects in the Logistics Management System folder or window, shown in FIG. 2. In this regard, the window shows a sample set of icons for the presently preferred system. Each icon is a pointer to a separate client, manager or server object. By double-clicking on the appropriate icon, its object is started. For example, double-clicking on the Shipments Client starts that program object running. Typically, once an object is started, it continues to run and is able to communicate with other program objects via the interprocess communications (IPC) mechanism.

Shipments Client

Shown in FIG. 4A, the Shipments client accepts user input for the routing, rating and documentation of a group of packages comprising a shipment. Multiple shipper accounts are allowed and the desired account may be selected from the Shipper "drop-box." Similarly, the service is selected from the Service box. Alternatively, the service may be set to Best Way and the system will choose the least cost carrier which meets the transit time requirements indicated in the commitment field.

The operator types or scans the Reference # (such as order #, pick ticket #, . . .) and the system may be set to look up the associated information from one or more local and remote sources such as databases and mainframe or mini-computer terminal sessions. The upper left quadrant of the screen is to record information for the shipment as a whole.

The lower left quadrant is used to record specific information for each package in the shipment. In all client data entry screens there are several special data entry provisions. Any field which has an ellipsis (. . .) at its right edge has additional related fields of data available to be "examined" or edited by touching the F10 key or clicking the Examine icon. A popup window with the associated fields is displayed for the user. In addition, most fields may be set up to "browse" available valid entries. They may browse from database records or from "hard-coded" values in scripts.

The Shipments client and most other clients are capable of processing shipments of mixed modes; e.g. small parcel ground, small parcel air, LTL motor freight, air freight, and TL motor freight.

Packages Client

Shown in FIG. 4B, the Packages client is designed to facilitate the entry and processing of shipments which typically consist of single small packages. Although, like most other clients, it will handle multiple modes of shipment, it is best suited for single piece shipments. If a multi-piece shipment is encountered, the user may touch CTRL-M or click the Multi button and the shipment is accommodated.

Script Administration

The Script Administration object, shown in FIG. 4C, allows the creation and editing of scripts for the modification of default behavior of the clients. A script may be triggered in various ways, such as upon the changing of the contents of virtually any field, upon the pressing or clicking of the function buttons on the client screen, upon the opening or closing of the client, and so on. In the illustration of FIG. 4C, the Shipments client is being operated upon to modify the Commitment terms based on the type of Service being used by the shipper.

UPS Rate Adjustments

Referring to FIG. 4D, the UPS Rate Adjustments program object and substantially similar objects for each of the carrier rate servers installed on the system, allow the user to adjust the discounts and incentive programs extended to the shipper by the carrier. Existing discounts may be edited, or new incentive programs not yet envisioned by the carrier may typically be created by the user within the flexible structure of this client type. Adjustments may be qualified by destination (either zone, postal code or destination country) and by weight range. Adjustments may be calculated as percentages or fixed amounts and include or exclude special service fees. If desired multiple adjustments may be created and put into effect.

Serial Port 2 Configuration

The Serial Port 2 Configuration screen, shown in FIG. 4E, is a part of the Device Manager object. It allows the adjustment of basic serial port setup values. By clicking on the "Defaults" button, the default settings appropriate to the specific attached device are automatically entered. The "Test" button provides a facility for sending data to and receiving data from the attached device. Additional aspects of the Device Manager object are discussed in connection with FIGS. 4G-4L, below.

Document Administration

The Document Administration object, shown in FIG. 4F, allows the user to adjust settings for the UCC-128 standards of serialized container marking and Electronic Data Interchange. It allows the user to load and store consignee names and addresses and UCC-128 specific values. It also allows the user to edit the database and settings as changes may occur.

printer may be selected, as illustrated. Thereafter, the user may click "OK" to return to the device manager screen, FIG. 4G. From the device manager screen the user can double-click on the printer icon to bring up the appropriate device settings menu (FIG. 4K) for that device. Referring to FIG. 4K, note the Current Stock states "No stock loaded." If desired, the user can change the current stock by clicking on the change button. This action brings up the stock selection menu of FIG. 4L.

Document Server

The document server, illustrated as one of the icons in FIG. 2, allows any client to print almost any type of document, including shipping labels, waybills and manifests. The information needed to print a document is processed through a script. This allows the data to be brought in from any number of sources such as databases, mainframes, files or user-entered information from a client application. Also, one document format can serve several client applications and any particular processing needs a user might have. This is quite readily accomplished due to the fact that all data is passed through scripts. Thus, for example, one user might look up the export information for a FedEx international document from a database, while another user might wish to hand enter this data. Both of these tasks can be accomplished by a single document format and without the need for custom programming.

Device Manager Object

The Device Manager provides a device-independent means of interfacing with peripheral devices. Device drivers can be added or removed without modifying the software. The Device Manager also provides integrated testing tools.

The Device Manager of the presently preferred embodiment has the ability to monitor power, through an uninterruptible power supply connected to the system. If power fails, the other applications are notified, and an orderly shutdown of the system will take place. This prevents loss or corruption of data by sudden power outage or by subsequent failure of battery power, once the reserves of the uninterruptible power supply have been depleted. The monitoring service provided by the Device Manager can shut down multiple machines on a network connected through one uninterruptible power supply.

Referring to FIGS. 4G-4L, additional capabilities of the Device Manager object are illustrated. In FIG. 4G the communications port COM2 is shown as assigned or connected to an electronic scale, in this case a scale designated Toledo 8213 Scale. The parallel port LPT1 is shown as being assigned or connected to a printer, in this case a printer designated IBM 2380 Printer. Beneath the printer designation there appears a notation "No stock" which indicates that no particular paper stock has yet been designated.

Double-clicking on the COM2 icon brings up the configuration screen shown in FIG. 4E. Selecting the pull-down menu designated "Device" brings up the device selection menu shown in FIG. 4H. Using the device selection menu the Toledo 8213 Scale may be selected, as illustrated. Thereafter, by returning to the device manager menu of FIG. 4G, the Toledo 8213 Scale icon may be double-clicked to bring up the device settings menu illustrated in FIG. 4I.

Alternately, from the device manager menu of FIG. 4G, the parallel port LPT1 may be selected (by single-clicking) and configured by again accessing the "Device" menu option. In this case, referring to FIG. 4J, the IBM 2380

Detailed Description of Client/Server Objects

The client/server architecture utilized by the logistics management system affords a great deal of flexibility. The client and server program objects are designed to work independently of one another, communicating with one another through a tokenized message handling mechanism discussed below. In this way, rate server data and user data are separated from one another. The advantage of this is that when a given carrier changes the way rates are handled, the affected rate server can be modified (to change the type or amount of data stored in that rate server, for example) without affecting the user's data in any way. This separation is important since carrier requirements and carrier service options may change at any time.

The presently preferred embodiment implements an internal version numbering scheme which provides a mechanism to allow client applications to determine what version of a server they are communicating with. In so doing, the client applications are able to make any necessary adjustments or to disconnect from that server if incompatibilities are found. This provides greater reliability, since server applications are given the ability to handle communications with servers intelligently.

Separation between client and server objects also makes possible an automatic updating capability whereby a user's existing setup information is automatically merged into a new installation when an application is updated or reinstalled. This reduces the amount of setup time due to reinstallation.

Each server of the presently preferred embodiment has built-in debugging capabilities which allow server transactions to be displayed on the screen or logged to a file for later analysis. The presently preferred rate servers optimize shipments to minimize cost through the use of shipment pricing rules supplied by the carrier. Optimization occurs "live" as a shipment is being processed, or, alternatively, at the end of the day when all packages shipped are then optimized. The rate servers can directly access carrier-supplied data, such as Federal Express routing and rate file data. This allows the user to load in new rate information as soon as such information is provided by the carriers. In addition, the rate servers of the presently preferred embodiment have the ability to rate and process a package, but to withhold it from the manifest until notified to do so. This allows "pack and hold" or future shipping. This is important in an automated system where a package may be processed upstream, but not placed on the manifest until it reaches the shipping dock.

In the presently preferred embodiment client applications have editable bar code templates, to allow data to be entered via a barcode scanner. Because the templates are editable, they can be added to, deleted from or modified by the user without the need for additional programming. Clients can also process in "batch" mode, reading data from a source and sending that data to the appropriate rate servers for processing. The sources for data can include databases, files

or direct connection to a host computer via serial or network connection.

As stated above, the presently preferred embodiment uses a multitasking operating system which supports the processing of multiple processes or multiple threads effectively simultaneously. This allows client applications and server applications to operate effectively concurrently. To illustrate how multiple threads operate in the presently preferred embodiment refer to FIG. 5. In FIG. 5, the left-most box designated main thread 120 represents the starting point. Main thread 120 is launched by the operating system. One of the functions of main thread 120 is to perform or control the performance of the operating system routines illustrated in FIG. 5 by loop 122. When a server is started under the operating system the main thread launches a server thread, as represented by launch thread arrow 124. The server thread is represented by box 126. In the preferred embodiment the server thread performs the necessary initialization routines 128 and then enters a loop or state 130 where it waits for a client to initiate a connection request. When such a request is received the server thread launches a client thread, depicted in FIG. 5 by launch thread arrow 132. The client thread is depicted by block 134 in FIG. 5. It is responsible for handling the client's request. Once the client thread is launched by the server thread, the server thread returns to its wait for client loop or state 130, whereby the server thread is then able to launch additional client threads upon demand. Thus in the preferred embodiment, each server that is running will include a main thread and a server thread. Client threads are generated on an as needed basis. There is one client thread for each currently connected client.

Communication between client and server, whereby requests are passed to the server and responses passed back to the clients, may be accomplished in a variety of different ways. In general, the methods of communicating between multiple processes running on the same CPU include shared memory, semaphores, pipes, queues and signals. The methods of communicating between multiple processes running on different CPUs (distributed architecture) include mechanisms such as NETBIOS, named pipes, sockets and mail slots. Collectively all of these methods of communicating between multiple processes form part of the interprocess communication (IPC) mechanism. Not all multitasking operating systems provide each of these IPC mechanisms. The presently preferred embodiment runs under the OS/2 operating system and uses LAN Server to provide operating system support for a distributed application architecture over a network. The presently preferred embodiment uses named pipes as the IPC mechanism.

Named pipes allow one process to communicate with another process as follows. The client process first requests a named pipe connection to a server process. Once this connection is made, there is little distinction between the client process and the server process, since either can communicate with the other. One advantage of using the named pipe IPC mechanism is that the client process machine does not have to be running under the same operating system as the server process. All that is required is that the operating system platform on which the client process is running will support named pipes. Thus, a client process running under MS-DOS, or under MS-DOS with windows, for example, could establish communication with a server process running under the presently preferred OS/2 system, provided named pipe communication is supported. Essentially, under a named pipe communications scheme, the server process is known by a pipe name. Programs wishing to connect to that server will use the pipe name, in

a fashion similar to using a file name. For example, pipe names may take the form:

PIPE\pipename; or
\server\PIPE\pipename.

Although the named pipe IPC mechanism permits communication between any server and any client, the presently preferred configuration constrains communication to a tree-structured communications scheme illustrated in FIG. 6. Referring to FIG. 6, the single supervisory server communicates directly with only supervisory managers. In FIG. 6 the lines of communication are designated by the letter "C" at one end and the letter "S" at the other end. These indicate, for a given line of communication, which object is the client and which object is the server. Thus each of the supervisory managers communicates as the client with the supervisory server. In a similar fashion, the rate server, label server, external processing manager and device manager all communicate as clients with the supervisory managers, as servers. Likewise, the rate server administration object, the shipping client and the device manager administration object all communicate as clients with one or more of the objects appearing above them in FIG. 6 (namely rate server, label server, external processing manager and device manager). Thus it will be seen that certain objects function in a dual capacity, serving as client objects in some instances and serving as server objects in other instances.

The presently preferred communications scheme permits objects to communicate with devices, external databases and other computer systems which are not part of the client/server logistics management system. To accommodate this certain objects are given the ability to communicate with the outside world. These objects include the device manager, which communicates with hardware devices, such as printers, bar code scanners, modems, postal scales and the like. Communication with external databases and other programs which do not form a part of the client/server logistics management system (e.g., accounting software packages, spreadsheet programs, operating system utilities and the like) are communicated with through the external processing manager.

Because the presently preferred embodiment can be implemented in multiple CPU environments (distributed architecture), an announcement mechanism is provided in order to extend the communications scheme to multiple CPUs across a network. The supervisory managers are preprogrammed with the ability to send "announcements" across the network operating system according to the named pipe protocol which has been implemented. Thus, as illustrated in FIG. 6, each of the supervisory managers includes a communications pathway designated "announcements" through which communications with parts of the system operated by different CPUs are sent and received. The supervisory managers are not, themselves, responsible for coordinating this message passing between objects controlled by different CPUs. That function is reserved for the supervisory server, since the supervisory server occupies the unique position of controlling the registration process whereby client and server applications are made aware of each other in order to communicate. However, in order to distribute the announcement function, the supervisory managers are responsible for providing the actual announcement communications. In this regard, the supervisory managers act as servers, with the supervisory server in this instance, acting as the client. To illustrate this in FIG. 6, each of the supervisory managers is connected to the supervisory server by a second line of communication designed "receiver." It will be understood that these "receiver" connections repre-

sent a "reverse" client/server connection, in which the supervisory server acts as a client in order to request announcement services from the supervisory managers, acting as announcement servers.

In summary, FIG. 6 illustrates the preferred IPC connections over which client/server communications take place. The presently preferred embodiment uses a tokenized message passing scheme in which all data is passed back and forth between client and server as ordered pairs of tokens and associated data values. The purpose of the token is to uniquely identify the data associated with it. Referring to Table II in the accompanying Appendix, a sample listing of tokens is presented. Reading the columns of Table II from left to right, the left-most column lists the token name; the column to its immediate right gives a brief description of the nature of the value associated with the token; the next right-most column lists the type declaration of the value; and the right-most column gives the maximum length of the value, where applicable.

The tokenized message handling scheme is very flexible, in that new tokens can be added at any time to accommodate new features, without the need to rewrite all client and server data structures. This is in contrast to the conventional fixed field data structure used in conventional data communication schemes. In the conventional, fixed field data structure scheme adding a new data value often requires all program modules to be rewritten to accommodate the added data field. The tokenized message passing scheme of the present invention avoids this problem. If a new data field is required, to support a new feature, for example, a new token is created and only those objects which make use of the new value will need to be reprogrammed to scan for the newly added token. All remaining objects simply ignore tokens which are undefined for them.

The presently preferred tokenized message passing scheme implements automatic data type conversion. As set forth in Table II, the type definitions of all values associated with tokens are predefined, thus the tokenized message passing scheme has advance knowledge of the data types of all values. This allows the tokenized message handling scheme to perform all data type conversions, removing the need for client and server objects to perform type conversions. In other words, a server can pass a long word value to a client which is expecting a string value. The tokenized message handling scheme performs the data conversion automatically so that the server does not need to be aware of the client's data type requirements and the client does not need to be aware of the server's data type requirements.

External Processing a Manager

In order to allow the client server logistics management system to communicate with the outside world, e.g. with external data bases or other application programs, the external processing manager is provided. The external processing manager is, itself, a client of a supervisory manager, as illustrated in FIG. 6. The external processing manager, in turn, operates as a server to provide external processing functions to other clients. In FIG. 6 the shipping client uses the external processing manager for this purpose.

In the preferred embodiment, the external processing manager interfaces with the REXX command interpreter supplied with the OS/2 operating system. The external processing manager is designed to receive its instructions from an ASCII file called a script file. If desired the script file can be encrypted to prevent unauthorized access. The script file comprises a list of program commands or instructions

written in the REXX language. If desired, the REXX language command set can be extended to add additional commands. This may be done by embedding the additional commands in the external processing manager. The external processing manager would invoke the REXX interpreter and register itself as the source of the additional commands. In this way, the REXX interpreter would automatically pass control to the external processing manager to handle the additional commands. The external processing manager is designed to communicate directly with the REXX interpreter, passing the script file commands to the REXX interpreter and requesting the output of the REXX interpreter to be directed back to the external processing manager, where appropriate. In this way, the external processing manager is given access to the operating system and to all other application programs running on the operating system. This is a very powerful command which allows the logistics management system to interface with other applications which may not necessarily be designed to integrate directly with the logistics management system. For example, the external processing manager could use the REXX interpreter to send SQL queries to a database, in order to upload information about a customer's account from the accounting system software.

The external processing manager's ability to handle scripts provides another powerful feature. Scripts may be written for the purpose of modifying the performance of other program objects comprising the logistics management system. Scripts can be used, for example, change the shipments client to provide a reminder message to the user in the event the user attempts to ship a package without first entering the weight of the package. Similarly, a script could be written to change the shipments client to supply a convenient list of package dimension sizes, allowing the operator to quickly fill in the size of a package in the appropriate field by simply selecting it from a list. In general, the scripting language can be used to provide virtually any custom tailoring that a shipper might want to implement. The REXX language is straight forward and easy to use, thus most customizing to meet the user's requirements can be done in the field, without the need to access or modify the underlying program source code.

In running a script to modify the performance of a program object, the external processing manager uses the existing IPC mechanism. Through this mechanism the external processing manager can request a data item stored by the object or it may supply a data value as an input to the data object. In addition, the external processing manager can request that one or more operations defined for that object to be performed. Thus the external processing manager serves as an alternate to the normal user interface as a means for manipulating data or performing operations.

From the foregoing it will be seen that the present invention provides a logistics management system comprising a plurality of building blocks or client/server objects. These objects can be configured to communicate in a variety of different ways to accommodate virtually any transportation-related logistics application. Thanks to the client/server architecture and the support for distributed architectures, the overall logistics management task is readily subdivided into highly self contained functional units. When changes in a given function are required, only the object providing the function normally needs to be changed. The client/server objects provide further flexibility through the external processing manager and scripting language, whereby individual objects can be modified to provide special features quite readily on an as needed basis.

While the invention has been described in its presently preferred form, it will be understood that the principles of the invention may be extended to a wide variety of different forms. Accordingly, the preferred embodiment described

herein should be considered as exemplary of the principles of the invention and not as a limitation of the scope of the claims.

TABLE II

I/O TOKEN	VALUE DESCRIPTION	TYPE DESCRIPTION	MAXI-MUM LENGTH
<u>Registry</u>			
To register a program:			
REGISTER	PROG_ID_... id from PROGRAM PROGISTLH machine on ID which program is running MACHINE blank if no network use getmachinename() function		string
To unregister a program:			
UNREGISTER	PROG_ID_... id from PROGRAM PROGISTLH machine on ID which program is running MACHINE blank if no network use getmachinename() function		string
Use this to get a list of ALL programs running in the environment. If FILENAME is blank, then either the program is not a server or it is a server you cannot use. For historical purposes, you may use ENUM SERVER as well as ENUM PROGRAM.			
ENUM	your currentlocal machine	string	
PROGRAM	blank if no network use getmachinename() function		
MACHINE	[PROG_ID_... id from ID PROGISTLH user-friendly NAME name of the program FOR DISPLAY PURPOSES ONLY!!	string	150
TYPE	"server type" mask from PROGRAM	ushort	
MACHINE	PROGISTLH machine on which program is running FOR DISPLAY PURPOSES ONLY!!	string	
ZONE	where is the program running? 1 = on your local machine 2 = somewhere else	short	
FILENAME	pipe name you may use to access server - BLANK IF YOU CANNOT ACCESS SERVER	string	
...			
<u>Announcements</u>			
Use this to send an announcement. Only include the DATA token if you need it (it uses a queue slot on the receiving machines). You may include one or more specific machine names if you want the announcement sent to specific machines. If you don't specify MACHINE or if it is blank, the announcement will be sent to all machines currently in the environment.			
ANNOUNCE	ANN_... from ANNOUNCE.H ID optional string	long string	ANNOUN CE_DATA LEN]
[DATA			
[MACHINE	destination machine name	string	
...			
<u>Miscellaneous</u>			
Use this to close the environment. This is harmless and will not close anything that is not ready to be closed. It will never shut down a machine.			
SHUTDOWN			
<u>System Numbers</u>			
If QUERY/ENUM/MODIFY SYSNBR is used with an SYSNBR ID that does not yet exist, an entry is automatically added to the number list with these defaults:			
Last value	(VALUE)	0	
used			
First in sequence	(START)	1	
LimitLast in sequence	(STOP)	2147483646	(maximum long)
In all cases, the value passed for TOK_SYSNBR must be non-zero (except for ENUM) and unique within all programs that might ever be running in the system. The recommendation is to use the appropriate TOK_... define for			

TABLE II-continued

I/O TOKEN	VALUE DESCRIPTION	TYPE DESCRIPTION	MAXIMUM LENGTH
your SYSNBR value.			
To get the next number in sequence:			
QUERY	see rules above	short	
SYSNBR			
VALUE	next number in sequence	long	
To get the status of an entry in the number list:			
ENUM	see rules above	short	
SYSNBR			
ID		short	
VALUE	see doc above	long	
START	see doc above	long	
STOP	see doc above	long	
INCREMENT	see doc above	long	
To get the status of all entries in the number list:			
ENUM			
SYSNBR	(no value specified)		
[
ID		short	
VALUE	see doc above	long	
START	see doc above	long	
STOP	see doc above	long	
INCREMENT	see doc above	long	
...]			
To change the status of an entry in the number list:			
MODIFY			
SYSNBR	see rules above	short	
VALUE	see doc above - optional	long	
START	see doc above - optional	long	
STOP	see doc above - optional	long	
INCREMENT	see doc above - optional	long	
If any optional token is not specified, the previous value is not changed. This can be used to change certain numbers without being required to change others. For example, if you add an entry and want to use the defaults for START, STOP and INCREMENT but want to specify your own VALUE, you can do it.			
<u>Shipper Maintenance</u>			
All of these commands deal with the master list of shippers. Clients can access the master list via ENUM. An announcement is sent when any shipper information of any kind changes. This allows other programs to know when they need to do another ENUM - especially if they are storing additional shipper information in parallel with this master list. Other programs can use LOCK and UNLOCK to prevent a shipper from being deleted "out from under them."			
To get full information on all current shippers:			
ENUM			
SHIPPER			
[
ID	Unique ID for this shipper	string	
SYMBOL	unique shipper short name		SHPAB-BRLEN
NAME	follows C rules for a variable user-friendly shipper name FOR DISPLAY PURPOSES ONLY!!	string	undefined
ERRCODE	validity/status of shipper		
SHPNA	name/address		
SHPABBR	shipper abbreviation	string	
LOCK	is shipper locked by some program?	boolean	SHPAB-BRLEN
...]			
To get full information on a shipper:			
ENUM			
SHIPPER	shipper ID (from ENUM SHIPPER)		
ID	unique ID for this shipper		
SYMBOL	unique shipper short name	string	
NAME	follows C rules for a variable user-friendly shipper name FOR DISPLAY PURPOSES ONLY!!	string	undefined
ERRCODE	validity/status of shipper		
SHPNA	name/address		
SHPABBR	shipper abbreviation	string	
LOCK	is shipper locked by some program?	boolean	SHPAB-BRLEN
To change a shipper's information:			

TABLE II-continued

I/O TOKEN	VALUE DESCRIPTION	TYPE DESCRIPTION	MAXI-MUM LENGTH
MODIFY	shipper ID (from ENUM		
SHIPPER	SHIPPER)		
SHPNA	name/address - optional		
SHPABBR	shipper abbreviation - optional	string	SHPAB-BRLEN
To add a shipper:			
ADD			
SHIPPER			
To delete a shipper:			
DELETE	shipper ID (from ENUM		
SHIPPER	SHIPPER)		
To check-out a shipper to a program to prevent deleting:			
LOCK	shipper ID (from ENUM		
SHIPPER	SHIPPER)		
PROGRAM	PROG_ID_... ID from		
	PROGISTL.H		
MACHINE	machine on which program is		
	running string blank if no		
	network use		
	getmachinename() function		
To check-in a shipper (UNLOCK):			
UNLOCK	shipper ID (from ENUM		
SHIPPER	SHIPPER)		
PROGRAM	PROG_ID_... ID from		
	PROGISTL.H		
MACHINE	machine on which program is		
	running string blank if no		
	network use		
	getmachinename() function		
<u>Commitment Code</u>			
To get the master list of available commitments:			
ENUM			
COMMIT-			
MENT			
[
ID	COMMIT_... ID from RATER.H	string	undefined
SYMBOL	Commitment short name		
NAME	follows C rules for a variable		
	user-friendly commitment		
	name FOR DISPLAY		
...]	PURPOSES ONLY!!		
START	use manifest mode?	boolean]	
[MANIFEST	/* default package info */		
SHIPDATE	date (TDC	long 0	
SHIPPER	ID	short 0	
DONTBAND	don't band yet	boolean	
SERVICE	ID (see FDXRATER.H)	short 0	
PKGTYPE	ID (see RATER.H)	short 0	
PAYTYPE	payment type (see RATER.H)	short 0	
PAYORACT	payor account number	string	LFDX_- PAYOR
WEIGHT	Weight	long 3	
REF	reference	string	LEN_REF- ER- ENCE
LENGTH	package length	short 0	
WIDTH	package width	short 0	
HEIGHT	package height	short 0	
RCPID	recipient ID	string	LEN_RECIP- IENT- ID
RCP- CONTACT	recipient contact name	string	NALEN_- CON- TACT
RCP- COMPANY	recipient company name	string	NALEN_- COM- PANY
RCPADDR1	recipient address line 1	string	NALEN_- ADDR
RCPADDR2	recipient address line 2	string	NALEN_- ADDR
RPCCITY	recipient city	string	NALEN_- CITY
RCPSTATE	recipient state	string	NALEN_-

TABLE II-continued

I/O TOKEN	VALUE DESCRIPTION	TYPE DESCRIPTION	MAXIMUM LENGTH
DEST	postal code	string	STATE_NALEN_ZIP
RCPPHONE	recipient phone number	string	MAXPHONELEN
CODAMOUNT	COD amount	long 2	
CODTYPE	logical OR of COD_ . . .	short	
HAZ	hazardous materials?	boolean	
SIGREL	signature release?	boolean	
DIRECTDEL	direct delivery (Dingle)?	boolean	
HOLD	hold for delivery?	boolean	
SATDEL	Saturday delivery?	boolean	
DECVAL	declared value	long 0	
ICE	weight of dry ice (whole lbs)	short 0	
]			
LISTID	next package list ID	long 0	
ITEM			
LISTID	id	long 0	
[
SHIPDATE	date (TDC)	long 0	
SHIPPER	ID	short 0	
DONTBAND	don't band yet	boolean	
SERVICE	ID (see FDXRATER.H)	short 0	
PKGTYPE	ID (see RATER.H)	short 0	
PAYTYPE	payment type (see RATER.H)	short 0	
PAYORACCT	payor account number	string	LFDX_PAYOR
WEIGHT	Weight	long 3	
REF	reference	string	LEN_REFER-ENCE
LENGTH	package length	short 0	
WIDTH	package width	short 0	
HEIGHT	package height	short 0	
RCPID	recipient ID	string	LEN_RECIP-ENT-ID
RCP-CONTACT	recipient contact name	string	NALEN_CON-TACT
RCP-COMPANY	recipient company name	string	NALEN_COM-PANY
RCPADDR1	recipient address line 1	string	NALEN_ADDR
RCPADDR2	recipient address line 2	string	NALEN_ADDR
RCP CITY	recipient city	string	NALEN_CITY
RCPSTATE	recipient state	string	NALEN_STATE
DEST	postal code	string	NALEN_ZIP
RCPPHONE	recipient phone number	string	MAXPHONELEN
CODAMOUNT	COD amount	long 2	
CODTYPE	logical OR of COD_ . . .	short	
HAZ	hazardous materials?	boolean	
SIGREL	signature release?	boolean	
DIRECTDEL	direct delivery (Dingle)?	boolean	
HOLD	hold for delivery?	boolean	
SATDEL	Saturday delivery?	boolean	
DECVAL	declared value	long 0	
ICE	weight of dry ice (whole lbs)	short 0	
]			
MSN	ID	long 0	
RTCODE	routing code	string	
COMMIT-MENT	code (see RATER.H)	short 0	9
ARRIVE	date (TDC)	long 0	
DIMWT	dimensional weight	short 0	
[TRACKNBR	tracking number/COD tracking #	string	11]

TABLE II-continued

I/O TOKEN	VALUE DESCRIPTION	TYPE DESCRIPTION	MAXI-MUM LENGTH
CODRETRK	COD return tracking number	string	
CONTENTS	/* ignored for now */		
RATE			
LISTID	ID	long 0	
standard	see SERVER.DOC		
COD	COD charge	long 2	
DECLVAL	declared value charge	long 2	
HAZ	dangerous goods charge	long 2	
SATDEL	saturday delivery charge	long 2	
SATPU	saturday pickup charge	long 2	
ALASKACHG	Alaska delivery charge	long 2	
HAWAIICHG	Hawaii delivery charge	long 2	
DIMRATE	any package DIM rated?	boolean	
END			
LISTID	ID	long 0	
[DELETE	true to just throw list away	boolean[
{	/* if manifest */		
standard	see SERVER.DOC		
[
VOID	returns a list of other MSNs whose data was changed. Package documentation should be reprinted and any data saved should be QUERYed again.		
VOID			
ID	MSN	long 0	
[
MSN	list of MSNs	long 0	
...]			
LIST			
BAND			
SHIPPER	ID	short 0	18
[
NAME	displayable form of shipdate	string	
ID	thing to pass to band	long 0	
...]			
LIST			
DEL			
[TRANSMIT]			
SHIPPER	ID	short 0	
[
NAME	displayable shipdate &	string	21+
ID	seqnum filename	string	12
...]			
LIST			
TRANSMIT			
SHIPPER	ID	short 0	
[
NAME	shipdate & seqnum	string	21+
ID	filename	string	12
...]			
(see PRINT section - SERVER.DOC)			
LIST			
PRINT			
...			
BAND			
SHIPPER	ID	short 0	
ID	thing returned from LIST	long 0	
ID	filename created	string	12
DEL			
[TRANSMIT]			
[
ID	filename (returned from LIST)	string	12
...]			
(see PRINT section - SERVER.DOC)			
PRINT			
...			
ID	/* courier & summary report */ filename (returned from LIST) /* ASTRA label */	string	12
MSN	package master sequence number	long 0	
[PRINT- ERROR	ignore print error?	boolean]	
SHIPPER	/* rate chart */ ID /* airbill */	short 0	

TABLE II-continued

I/O TOKEN	VALUE DESCRIPTION	TYPE DESCRIPTION	MAXIMUM LENGTH
MSN	package master sequence number	long 0	
[MORE QUERY PRINT see PRINT section - SERVER.DOC]	true	boolean]	
...			
QUERY ITEM Standard stuff (see ENUM section - SERVER.DOC)			
ENUM SHIPPER			
[
SYSNBR	POWERSHIP plus number	string	
ACCOUNT	FedEx account number	string	
USER	IIN user id	string	
PWD	IIN password	string	
PWD	IE password	string	
USER	recipient user ID	string	
ORIGIN	origin station	string	
TRACKNBR	first tracking number	string	
TRACKNBR	last tracking number	string	
CODTRK	first COD tracking number	string	
CODTRK	last COD tracking number	string	
CODRETRK	first COD return tracking number	string	
CODRETRK	last COD return tracking number	string	
SIGREL	signature release authorization string number		
PWRSHP	POWERSHIP plus complaint	boolean	
DIMRATE	use dimensional rating	boolean	
GNDSAVER	use Express saver	boolean	
...			
]			
ENUM CONTROL			
SHIPPER			
TRACKNBR	ID last package tracking number used	string	
CODTRK	ID last COD tracking number used	string	
CODRETRK	ID last COD return tracking number	string	
COUNT	cycle count	long 0	
COUNT	transfer count	long 0	
ENUM CONFIG			
DIAL	Hayes-compatible dialout command	string	LFDX_DIAL
BAUD	baud rate	short	
PORT	port	short	
DIR	expedite directory	string	LFDX_PATH
see FDXRATER.H for more information on each element			
MODIFY SHIPPER	ID [see ENUM SHIPPER section]		
MODIFY CONTROL			
SHIPPER	ID [see ENUM CONTROL section]		
MODIFY CONFIG			
[see ENUM CONTROL section]			
(after END with MANIFEST TRUE, use this to change item information)			
MODIFY ITEM			
MSN	package master sequence number	long 0	
[DONTBAND	don't band yet /* see RATER.C */	boolean]	
LOCK			

TABLE II-continued

I/O TOKEN	VALUE DESCRIPTION	TYPE DESCRIPTION	MAXI-MUM LENGTH
SHIPPER	ID		
UNLOCK			
SHIPPER	ID		
REFRESH			
SHIPPER			
LOAD			
ZONE	/*URSA routing file -- unZIPS! */		
SHIPPER	ID		
FILENAME	drive (A,B, etc.)		
LOAD			
RATE	/* electronic rate file */		
SHIPPER	ID		
FILENAME	drivepath and filename		
LOAD			
REGION	/* region file, if Express saver */		
SHIPPER	ID		
FILENAME	drivepath and filename		
TRANSMIT			
SHIPPER	ID		
[
ID	filename		
...]			
CANCEL			

What is claimed is:

1. A logistics management system to facilitate the process 30 of shipping goods by a shipper having a predefined set of shipping requirements via a carrier having a predefined rate structure, comprising:

a multitasking operating system environment for running 35 a plurality of computer processes substantially simultaneously and having interprocess communication means for passing messages between said processes; a supervisory server running in said operating system environment for providing registration services to connect computer processes to said interprocess communication means;

at least one rate server comprising one of said computer processes running in said operating system environment 45 substantially simultaneously with said supervisory server for providing access to carrier rate structure data and for providing predefined data processing services using said carrier rate structure data in response to a predefined set of request messages, said predefined 50 data processing services including providing response messages based at least in part on said carrier rate structure data;

said rate server having registration means for communicating with said supervisory server to invoke said 55 registration services and to establish a first connection to said interprocess communication means;

at least one client process comprising one of said computer processes running in said operating system environment substantially simultaneously with said supervisory server and substantially simultaneously with said rate server, said client process having user interface means for collecting input information from a user about a desired operation and for providing output 60 information;

said client process having registration means for communicating with said supervisory server to invoke said registration services and to establish a second connection to said interprocess communication means;

said client process further having preprogrammed set of rules reflective of said shipper's predefined set of shipping requirements and having processing means for using said preprogrammed set of rules and at least a portion of said input information to issue request messages to said rate server and to interpret response messages received from said rate server in providing said output information;

said supervisory server, said rate server and said client process being interoperable through said interprocess communication means (a) to receive said input information from a user via the user interface of said client process, (b) to use said input information to issue a request message to said rate server via said interprocess communication means, (c) to process said issued request message and thereby cause a response message to be generated by said rate server, (d) to send said response message to said client process via said interprocess communication means, and (e) to provide said output information based on said response message.

2. The system of claim 1 further comprising a predefined messaging system used by said client process to communicate through said interprocess communication means.

3. The system of claim 2 wherein said messaging system employs a plurality of predefined tokens to define the nature of a message.

4. The system of claim 2 wherein said messaging system employs a first plurality of predefined tokens recognized by said client process to define the nature of a message and a second plurality of predefined tokens ignored by said client process.

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5. The system of claim 1 further comprising at least one supervisory manager for interfacing between said client process and said supervisory server.

6. The system of claim 5 further comprising a predefined messaging system used by said client process to communicate through said interprocess communication means, the messaging system being structured whereby said client process communicates directly with said supervisory manager and said supervisory manager communicates directly with said supervisory server.

7. The system of claim 1 further comprising external processing manager for providing communications services to permit said client application to request and receive data

5
10**30**

from an external database not supervised by said supervisory server.

8. The system of claim 1 further comprising a predefined messaging system used by said client process to communicate with said rate server through said interprocess communication means, said messaging system having automatic data type conversion means for translating data in a form recognized by one of said client process and rate server into a form recognized by the other of said client process and rate server.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 5,485,369

DATED : January 16, 1996

INVENTOR(S) : Peter Nicholls et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

ON THE TITLE PAGE, in the TITLE, item [54], line 2, delete
"TRANSPORTATION" insert - TRANSPORTATION -.

Signed and Sealed this
Twenty-third Day of July, 1996

Attest:



BRUCE LEHMAN

Attesting Officer

Commissioner of Patents and Trademarks



US006233568B1

(12) **United States Patent**
Kara

(10) **Patent No.:** US 6,233,568 B1
(45) **Date of Patent:** May 15, 2001

(54) **SYSTEM AND METHOD FOR AUTOMATICALLY PROVIDING SHIPPING/TRANSPORTATION FEES**

(75) Inventor: Salim G. Kara, Markham (CA)

(73) Assignee: E-Stamp Corporation, Mountain View, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: 09/106,997

(22) Filed: Jun. 29, 1998

Related U.S. Application Data

(63) Continuation-in-part of application No. 08/796,275, filed on Feb. 7, 1997, now Pat. No. 5,774,886, which is a continuation of application No. 08/639,847, filed on Apr. 19, 1996, now Pat. No. 5,682,318, which is a continuation of application No. 08/176,716, filed on Jan. 3, 1994, now Pat. No. 5,510,992.

(51) Int. Cl.⁷ G07B 17/00

(52) U.S. Cl. 705/410; 705/401

(58) Field of Search 705/30, 401, 404, 705/410

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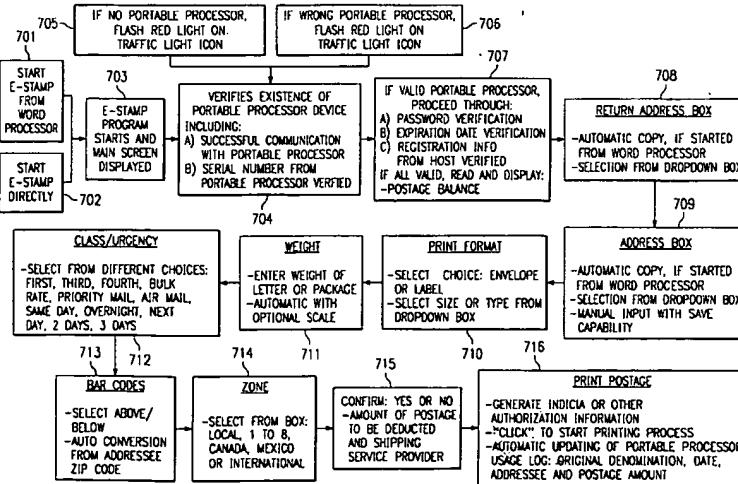
Primary Examiner—Edward R. Cosimano

(74) *Attorney, Agent, or Firm*—Fulbright & Jaworski L.L.P.

(57) **ABSTRACT**

There is disclosed a system and method for dispensing postage or other authorization information electronically by using a portable processor containing a maximum amount of preauthorized postage which can be applied to any piece of mail or other item. A plurality of shipping service providers may utilize the portable processor to store and dispense credit value for authorization of various shipping services. Accordingly, a user is presented with information regarding various shipping service providers fees and/or services associated with particular shipping/delivery parameters desired by the user in order to make an informed choice as to a most preferable method of shipment.

47 Claims, 23 Drawing Sheets



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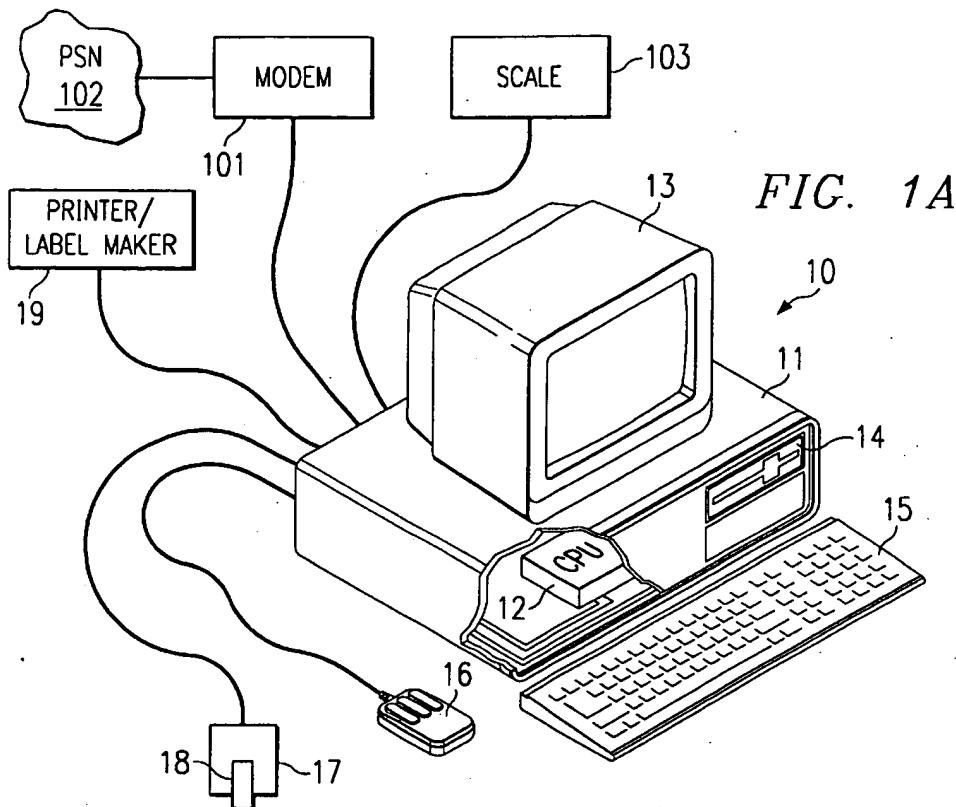
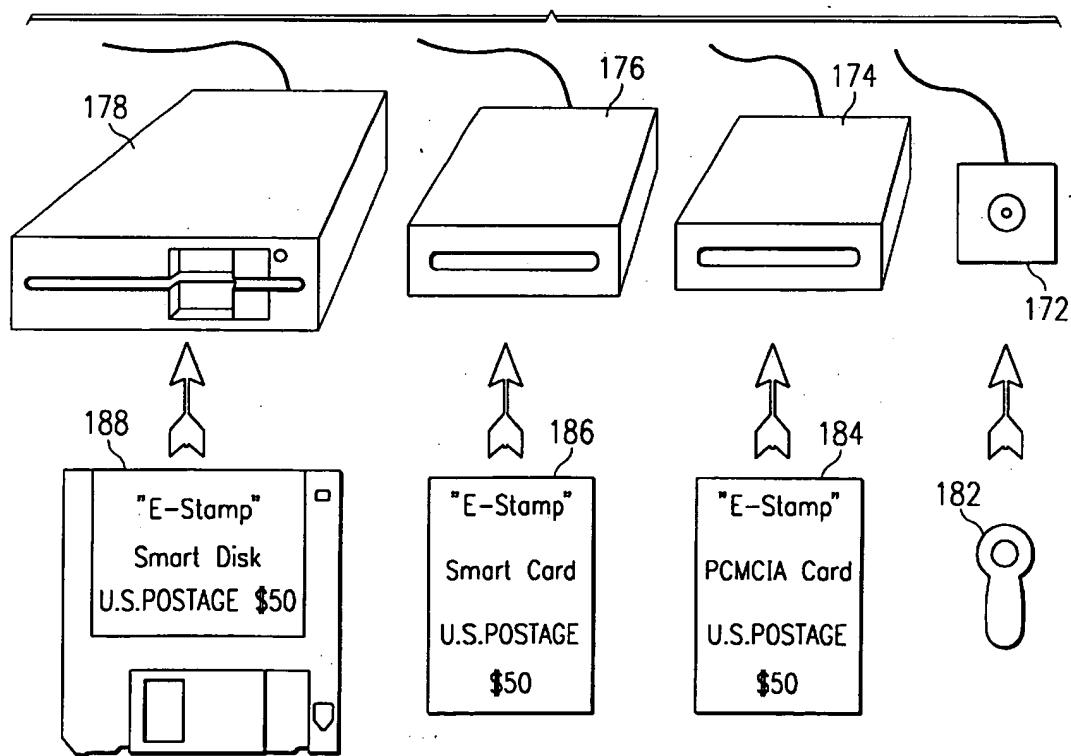


FIG. 1B



- 106 -

"E-Stamp" - Post N Mail, Inc.

201 { Software installation & screen prompts.
1. Insert disk 1 in drive.
2. Select Run...from File Menu in Program Manager
3. Type b:\setup and click O.K. (substitute b for correct drive)
4. Follow instructions on screen.

Screen 1.

203

1. Connect TMU holder to your Serial port. 2. Insert TMU button in holder.
3. Switch ON your printer, check paper.
4. Prepare the following information: Full name and address of owner,
EIN # (if organization), Social Security # (if individual)
Zip code 5+4, telephone and Fax #

Proceed

Screen 2.

205

1. Legal terms, conditions and Licensing agreement.
2. Acceptance of above by clicking Proceed.

Proceed

Screen 3.

207

1. Display of "E-STAMP" serial # and TMU serial # (non-accessible)
2. Enter owner information

Proceed

Screen 4.

209

WARNING.: Verify above information.
LAST CHANCE

Proceed

Screen 5.

211

1. Please ensure printer is ON LINE
2. The above information will be printed in triplicate
3. Sign and mail two copies to Post N Mail, retain one copy
4. A registration card will be mailed to you to access TMU refilling stations

Proceed

Screen 6.

213

INSTALLATION PROCEEDING
Now copying files... % completed
Insert diskette # 2

Proceed

Screen 7.

215

INSTALLATION PROCEEDING
Now copying files... % completed
Installation completed

FIG. 2

Post N Mail, Inc.
505 Cypress Station Dr. Suite # 505
Houston, Tx 77030-1612

Telephone (713)583-8909 Fax (713)699-0101

"E-Stamp"™ - Registration form

31 T.M.U. Button Serial #000000001 Date: April 20, 1994 }
32 E-Stamp Serial #000000001 Time: 01:29 AM } 33

35 Registered user:
 Individual Salim G. Kara Social Security # 636-18-0137
 Organization Global Impex, Inc. Employer I.N. # 76-0422781
 Address: 505 Cypress Station Dr.
 Suite #505
 City: Houston State: Tx Zipcode+4: 77090-1612
 Telephone: (713)583-8909 Fax: (713)699-0101

Post N Mail License Agreement

This is a legal agreement between you (an individual or an entity), the end user, and Post N Mail, Inc. If you do not agree to the terms of this Agreement, promptly return the disk package and accompanying items (including all hardware, written materials and binders or other containers) to the place you obtained them for a full refund.

License

38 1. Grant of License.
 2. Term of License.
 3. Copyright.
 4. Other restrictions.
 5. Limited warranty.
 6. Customer remedies.
 7. No Other Warranties.
 8. No Liability for Consequential Damages.

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Signature

FIG. 3A

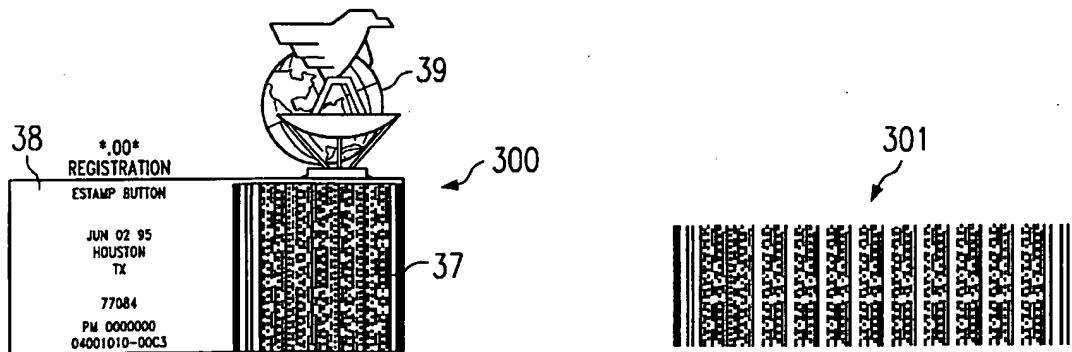


FIG. 3B

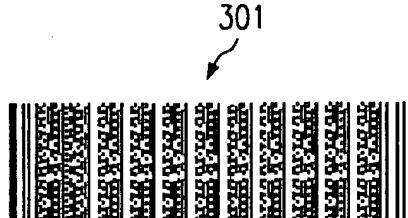


FIG. 3C

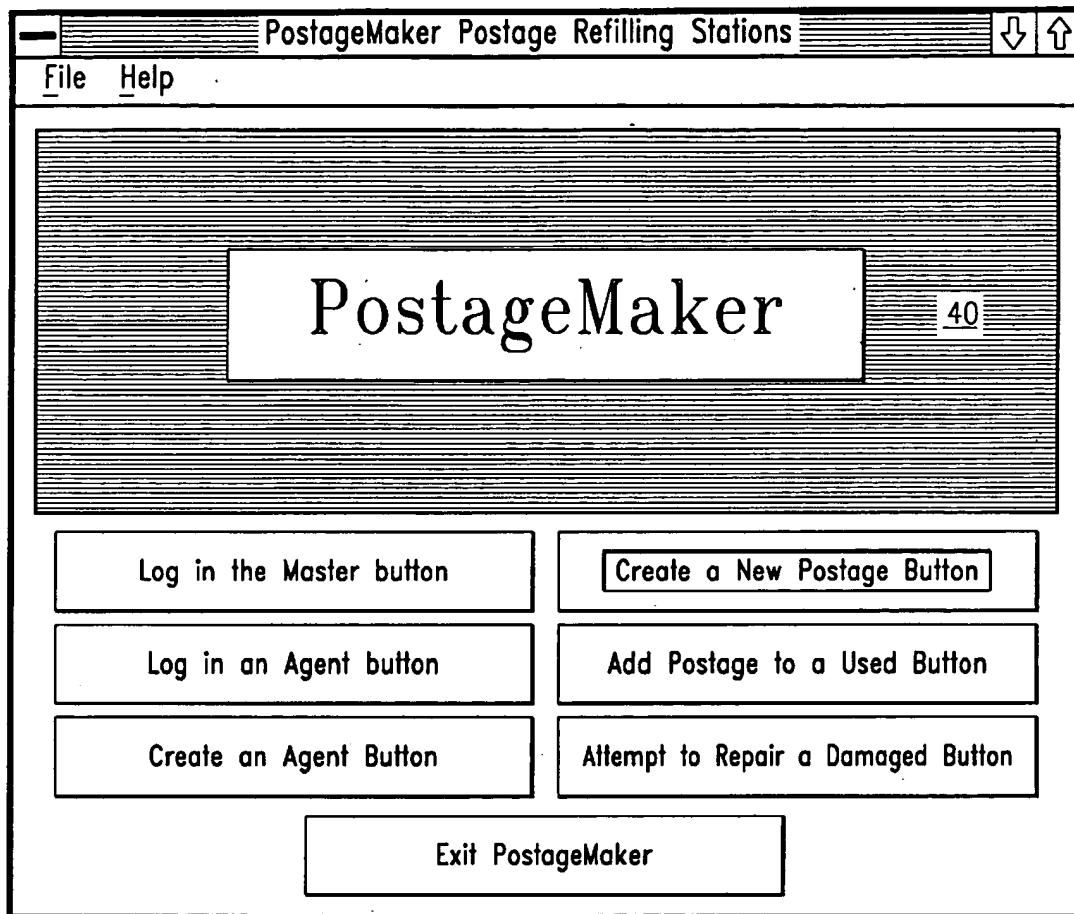


FIG. 4A

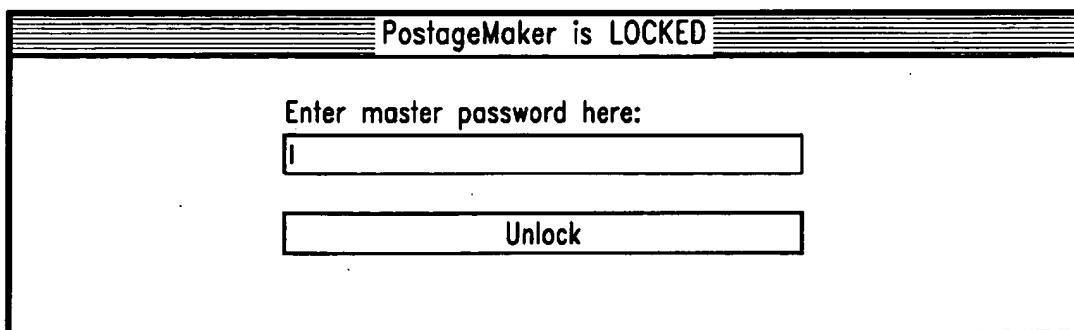


FIG. 4B

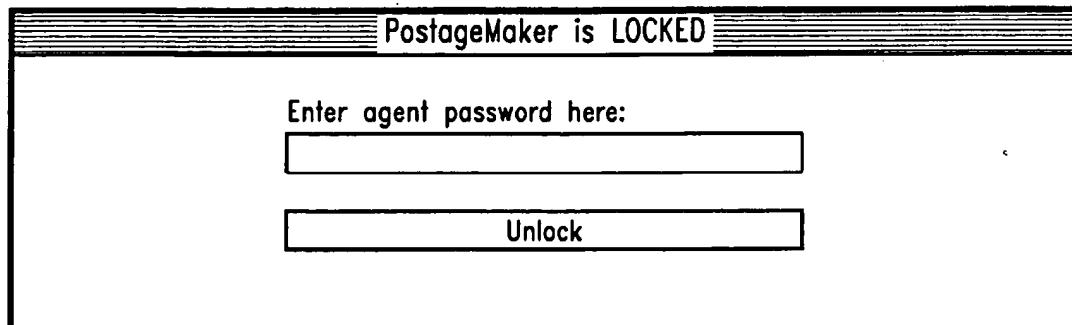


FIG. 4C

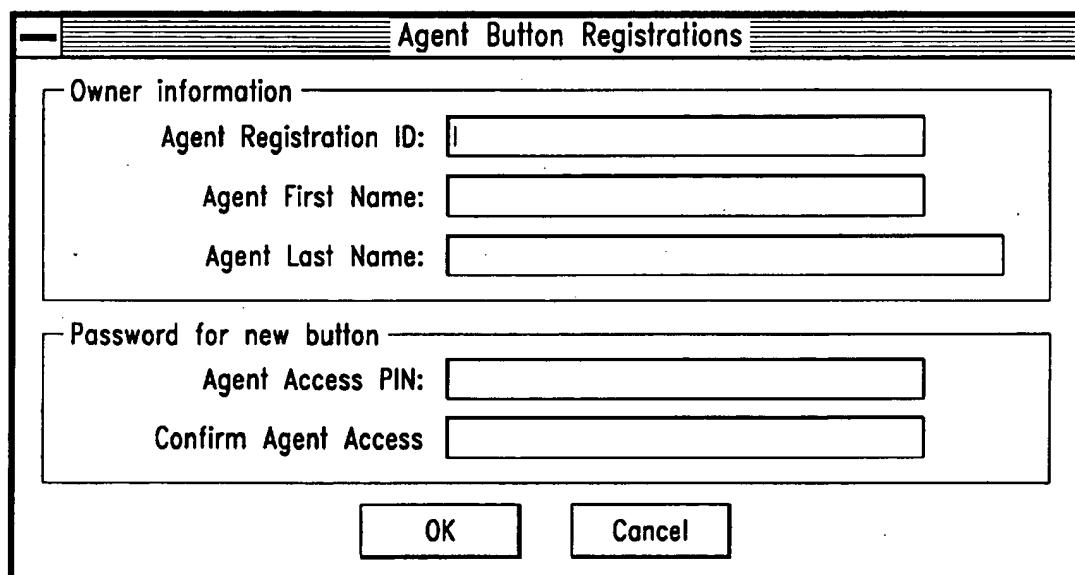


FIG. 4D

Agent Button Registrations

Owner information

Agent Registration ID:

Agent First Name:

Agent Last Name:

Password for new button

Agent Access PIN:

Confirm Agent Access

FIG. 4E

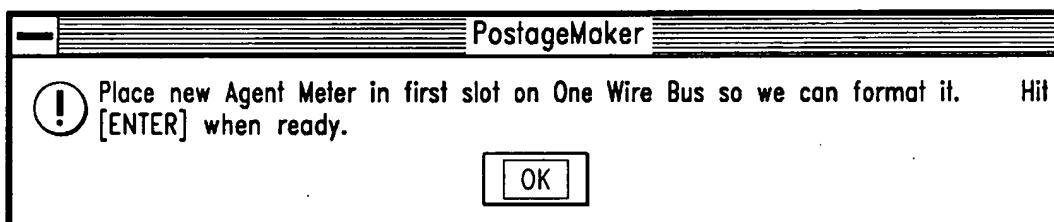


FIG. 4F



FIG. 4G

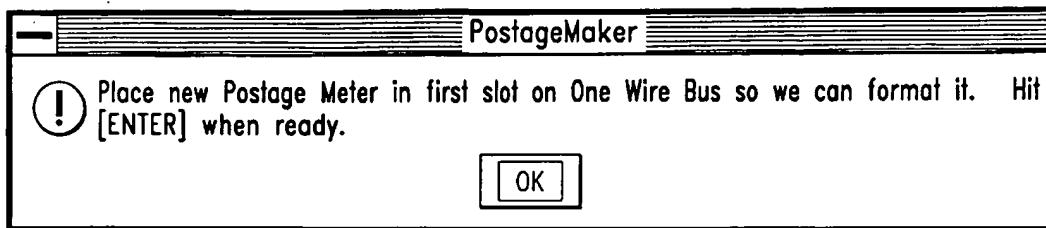


FIG. 4H

RECEIPT	RECEIPT NO:	AG7654321
POSTAGE BUTTON REFILL SERVICES		5/25
TRANSACTION:		
AUTHORIZATION CODE: MA1234567	TRANSACTION DATE: 5/25/95	
	TRANSACTION TYPE: INITIALIZE	
	TRANSACTION AMOUNT: 2.00	
POSTAGE BUTTON:		
SERIAL NO: 0800101000E0	OWNER:	
	OWNER ZIP CODE:	
	TRANSACTION COUNTER: 00	
FIG. 4I	REMAINING CREDIT BALANCE:	2.00

FIG. 4I

Add Postage to a Button		
Button information		
Button Serial No.: 0800101000E0	Name:	
PNM Registration No.:	Zip Code:	
Last Access On: 05/25/95	Expires On: 08/23/95	
Remaining Balance: \$2.00		
Add Postage		
Current Balance: \$2.00		
Transaction Balance:	<input type="text" value="100"/>	
Button Refill Information		
Refill Date: 05/25/95	Refill Time: 12:37 PM	
Site ID: 000001	Workstation 1	
Refill Balance:		
OK	Accept	Re-Enter
Cancel		

FIG. 4J

Add Postage to a Button

Button information

Button Serial No.: 0800101000E0 Name: Paul Alto
PNM Registration No.: Zip Code: 77026-4217
Last Access On: 05/25/95 Expires On: 08/23/95
Remaining Balance: \$2.00

Add Postage

Current Balance: \$102.09

Transaction Balance:

Button Refill Information

Refill Date: 05/25/95 Refill Time: 12:37 PM
Site ID: 000001 Workstation 1
Refill Balance:

OK Accept Re-Enter Cancel

FIG. 4K

Add Postage to a Button

Button information

Button Serial No.: 0800101000E0 Name:
PNM Registration No.: Zip Code:
Last Access On: 05/25/95 Expires On: 08/23/95
Remaining Balance: \$2.00

Add Postage

Current Balance: \$2.00

Transaction Balance: 100

Button Refill Information

Refill Date: 05/25/95 Refill Time: 12:37 PM
Site ID: 000001 Workstation 1
Refill Balance: \$102.00

OK Accept Re-Enter Cancel

FIG. 4L

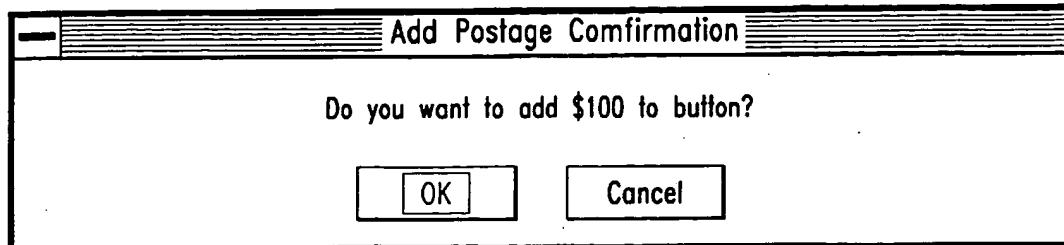


FIG. 4M

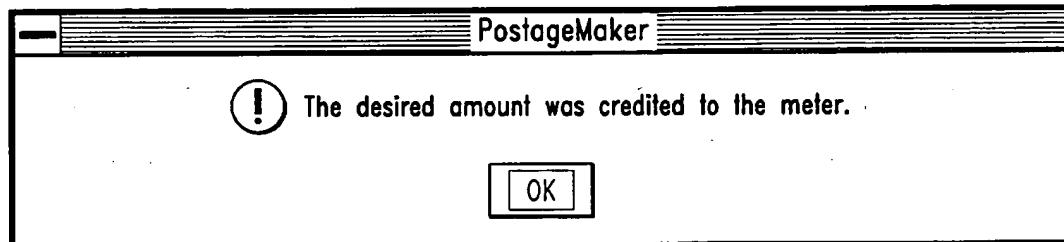


FIG. 4N

RECEIPT	RECEIPT NO:	AG7654321
POSTAGE BUTTON REFILL SERVICES	5/25	
TRANSACTION:		
AUTHORIZATION CODE: MA1234567	TRANSACTION DATE: 5/25/95	
	TRANSACTION TYPE: CREDIT	
	TRANSACTION AMOUNT: 100.00	
POSTAGE BUTTON:		
SERIAL NO: 0800101000E0	OWNER:	
	OWNER ZIP CODE:	
	TRANSACTION COUNTER: 01	
	REMAINING CREDIT BALANCE: 102.00	

FIG. 4O

INTERNAL BUTTON CREDIT PROCESS

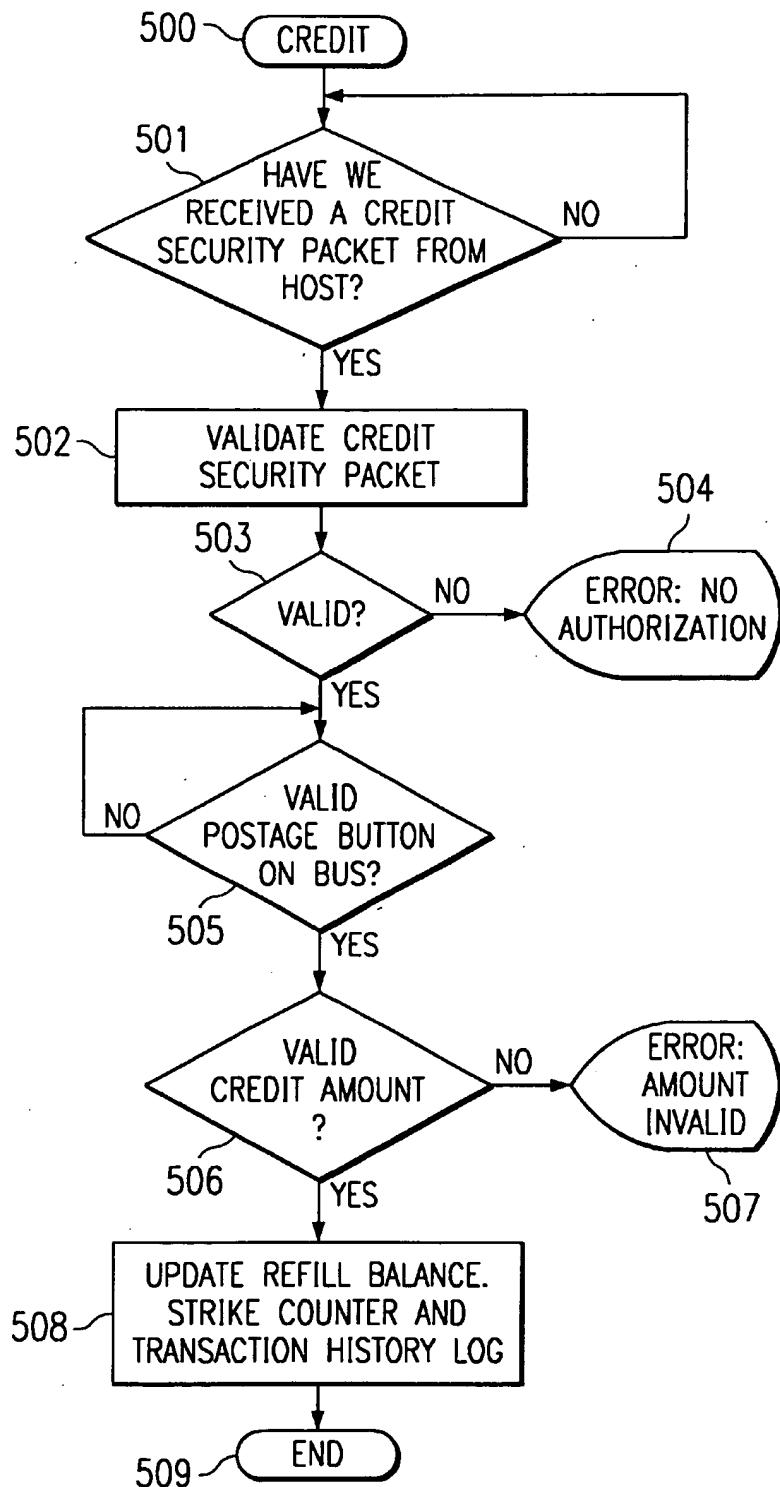


FIG. 5A

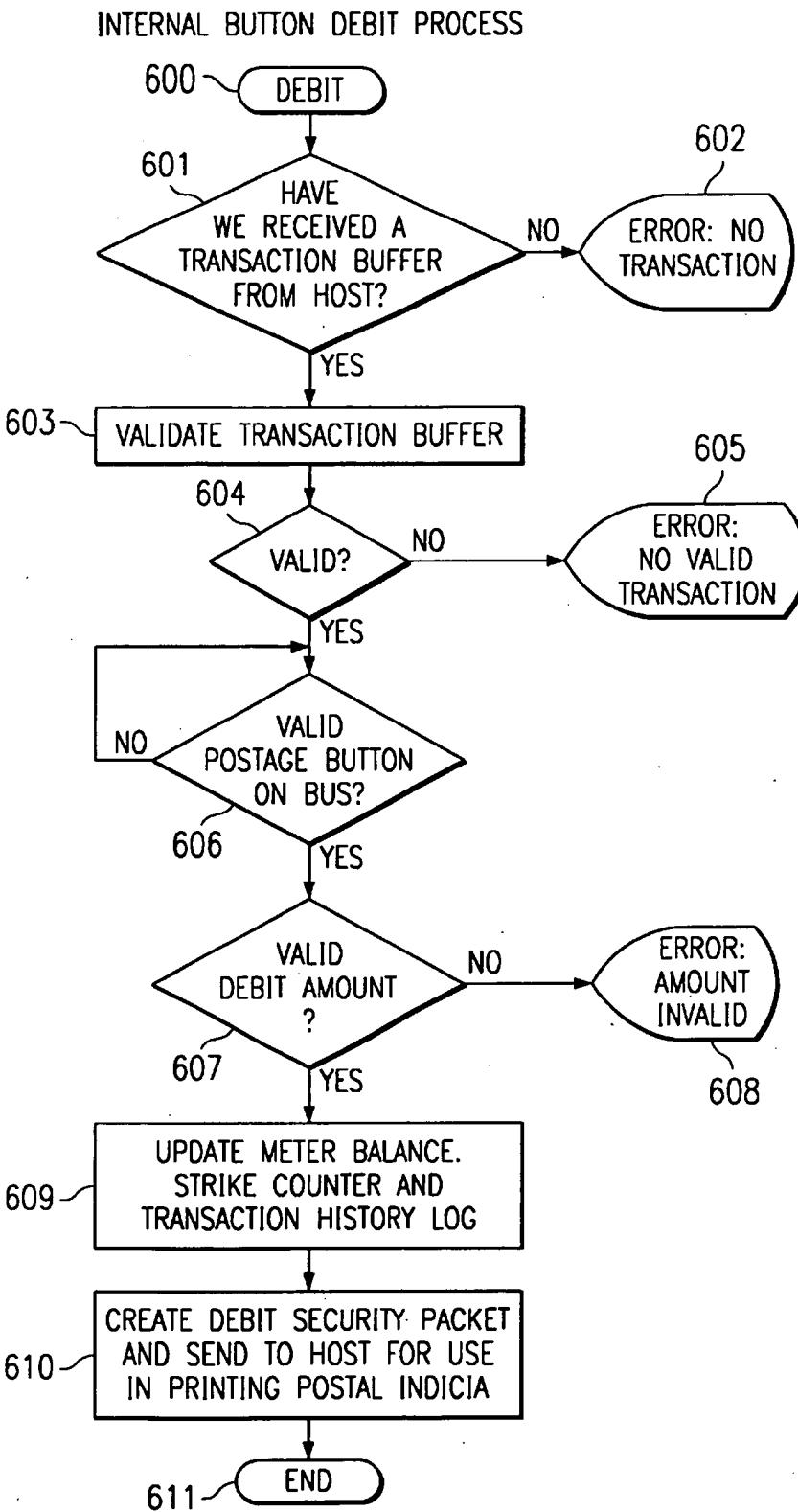
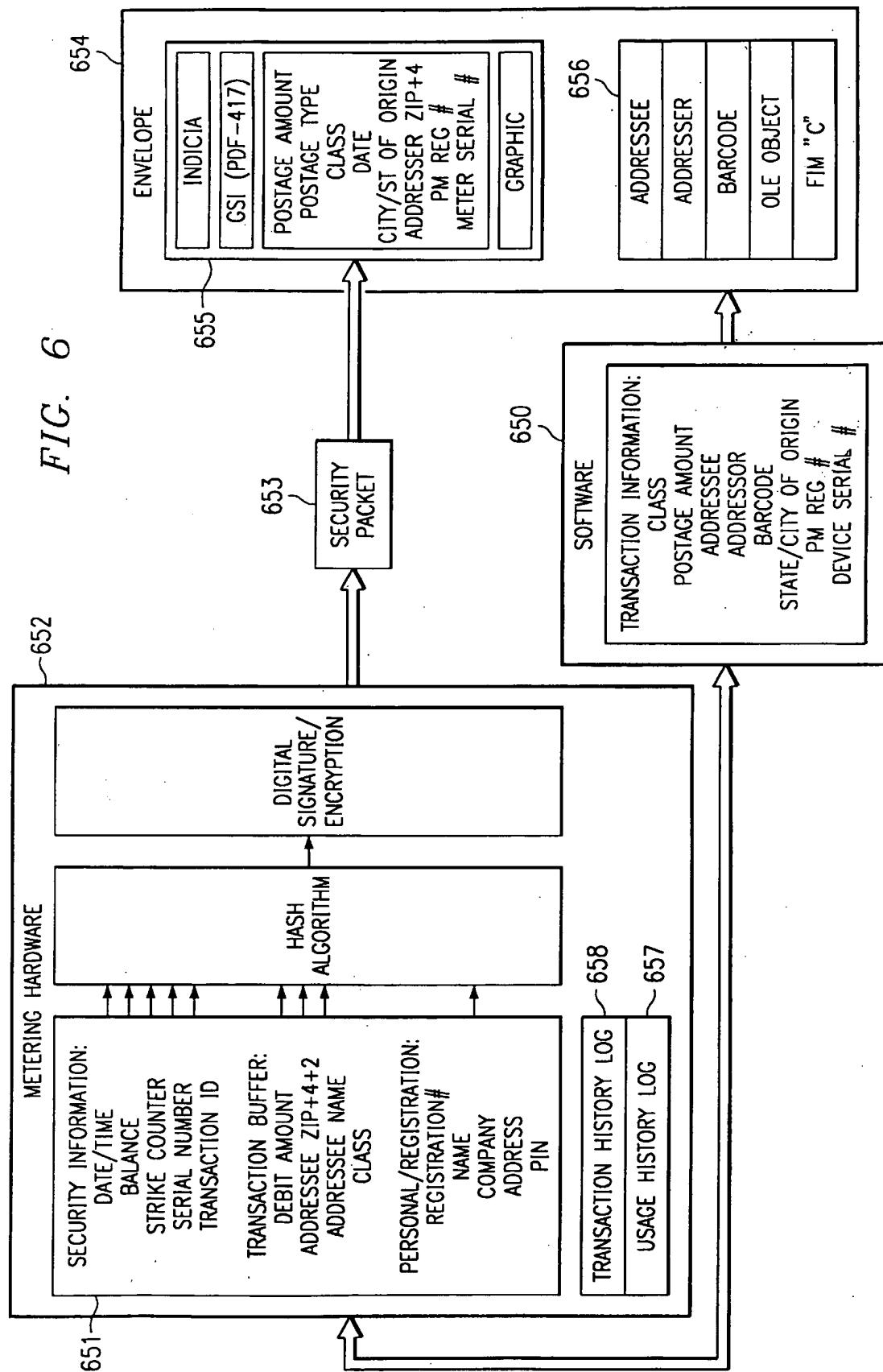
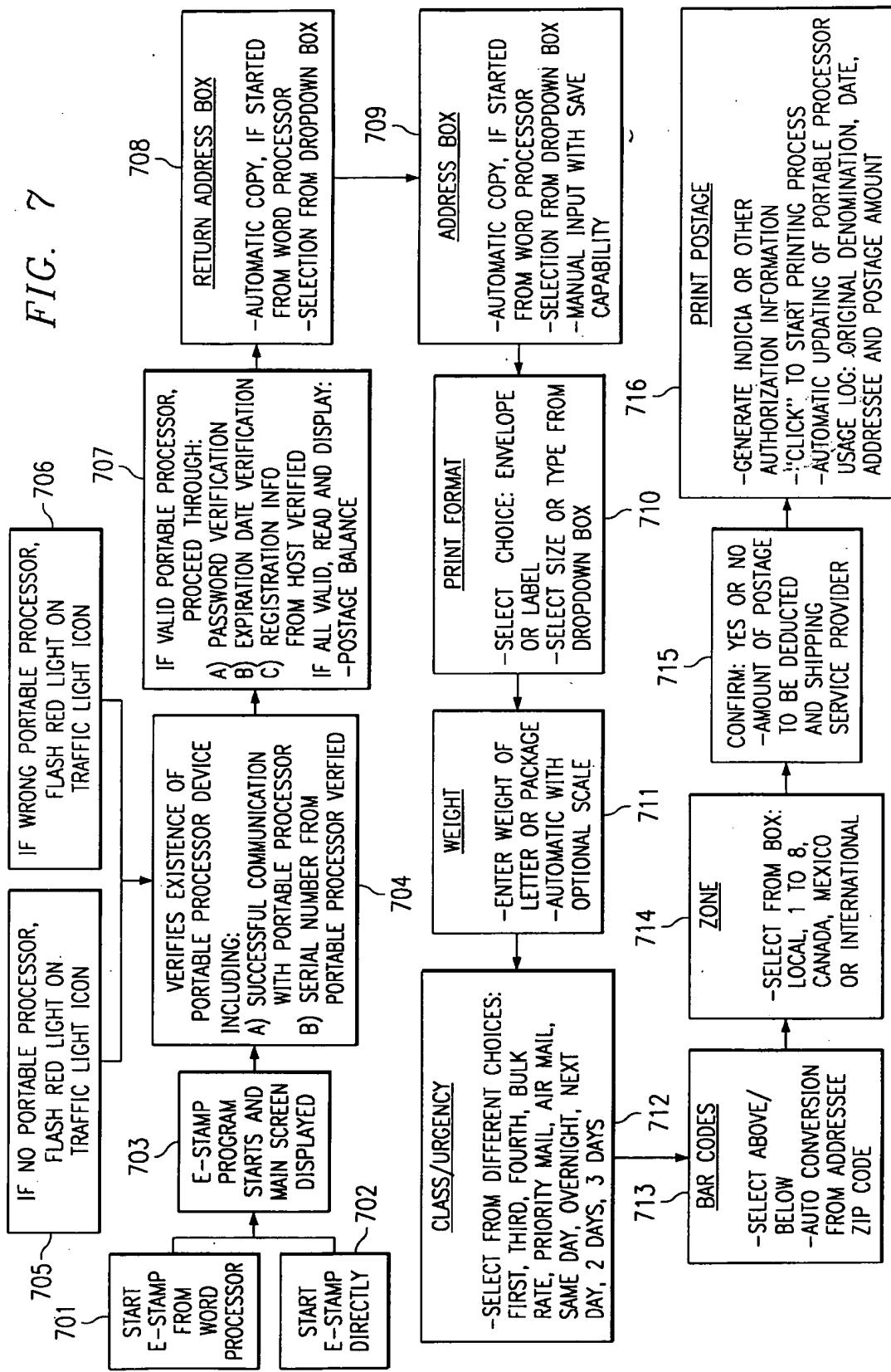


FIG. 5B





8

FIG.

E-Stamp-(Form)																															
File	Edit																														
Return Address																															
Name: Salim G. Kara	<input type="button" value="↓"/>																														
Company: Post N Mail L.C.	<input type="button" value="↑"/>																														
Address 1: 4255 San Felipe, Suite 250	803																														
Address 2:	805																														
City: Houston																															
State: TX																															
Country: USA	<input type="button" value="Font"/>																														
<input type="checkbox"/> Do not print	<input type="button" value="Save"/>																														
<input type="button" value="Add"/>	<input type="button" value="Delete"/>																														
Label																															
Starting position: 1 <input type="button" value="Set label position"/>																															
Mail																															
Weight: <input type="text" value="1"/>	Ounces <input type="text" value="1"/>																														
Zone: LOCAL	<input type="button" value="↓"/>																														
Class: FIRST	<input type="button" value="↓"/>																														
<input type="radio"/> Domestic <input type="radio"/> International																															
Ready 802																															
<table border="1"> <tr> <td colspan="2">Address To</td> </tr> <tr> <td>Name: Mr. Jack T. Trotter</td> <td><input type="button" value="Browse"/></td> </tr> <tr> <td>Company: FALCON 900 INTERNATIONAL</td> <td><input type="button" value="Font"/></td> </tr> <tr> <td>Address 1: 1000 Louisiana, Suite 3600</td> <td><input type="button" value="Save"/></td> </tr> <tr> <td>Address 2:</td> <td><input type="button" value="Add"/></td> </tr> <tr> <td>City: Houston</td> <td><input type="button" value="Barcode to right"/></td> </tr> <tr> <td>State: TX</td> <td><input type="button" value="Barcode above"/></td> </tr> <tr> <td>Zip: 77002</td> <td>+4: 1212</td> </tr> <tr> <td>Country: <input type="button" value="Browse"/></td> <td><input type="button" value="Font"/></td> </tr> <tr> <td colspan="2"> <input type="radio"/> Barcode to right <input type="radio"/> Barcode above </td> </tr> <tr> <td colspan="2"> <input type="button" value="Label Status"/> <input type="button" value="Postage"/> </td> </tr> <tr> <td colspan="2"> Amount Remaining: \$1001.680 </td> </tr> <tr> <td colspan="2"> <input type="checkbox"/> Manual <input type="button" value="↓"/> </td> </tr> <tr> <td colspan="2"> Calculated \$0.320 </td> </tr> <tr> <td colspan="2"> Button OK. </td> </tr> </table>		Address To		Name: Mr. Jack T. Trotter	<input type="button" value="Browse"/>	Company: FALCON 900 INTERNATIONAL	<input type="button" value="Font"/>	Address 1: 1000 Louisiana, Suite 3600	<input type="button" value="Save"/>	Address 2:	<input type="button" value="Add"/>	City: Houston	<input type="button" value="Barcode to right"/>	State: TX	<input type="button" value="Barcode above"/>	Zip: 77002	+4: 1212	Country: <input type="button" value="Browse"/>	<input type="button" value="Font"/>	<input type="radio"/> Barcode to right <input type="radio"/> Barcode above		<input type="button" value="Label Status"/> <input type="button" value="Postage"/>		Amount Remaining: \$1001.680		<input type="checkbox"/> Manual <input type="button" value="↓"/>		Calculated \$0.320		Button OK.	
Address To																															
Name: Mr. Jack T. Trotter	<input type="button" value="Browse"/>																														
Company: FALCON 900 INTERNATIONAL	<input type="button" value="Font"/>																														
Address 1: 1000 Louisiana, Suite 3600	<input type="button" value="Save"/>																														
Address 2:	<input type="button" value="Add"/>																														
City: Houston	<input type="button" value="Barcode to right"/>																														
State: TX	<input type="button" value="Barcode above"/>																														
Zip: 77002	+4: 1212																														
Country: <input type="button" value="Browse"/>	<input type="button" value="Font"/>																														
<input type="radio"/> Barcode to right <input type="radio"/> Barcode above																															
<input type="button" value="Label Status"/> <input type="button" value="Postage"/>																															
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<input type="checkbox"/> Manual <input type="button" value="↓"/>																															
Calculated \$0.320																															
Button OK.																															
804																															
806																															
NUM																															
<table border="1"> <tr> <td colspan="2">Urgency</td> </tr> <tr> <td><input type="checkbox"/> Same day</td> <td><input checked="" type="checkbox"/> Overnight</td> </tr> <tr> <td><input type="checkbox"/> Next day</td> <td><input type="checkbox"/> 2 Days</td> </tr> <tr> <td><input type="checkbox"/> 3 Days</td> <td><input type="checkbox"/> Immaterial</td> </tr> </table>		Urgency		<input type="checkbox"/> Same day	<input checked="" type="checkbox"/> Overnight	<input type="checkbox"/> Next day	<input type="checkbox"/> 2 Days	<input type="checkbox"/> 3 Days	<input type="checkbox"/> Immaterial																						
Urgency																															
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<input type="checkbox"/> Next day	<input type="checkbox"/> 2 Days																														
<input type="checkbox"/> 3 Days	<input type="checkbox"/> Immaterial																														
807																															
<table border="1"> <tr> <td colspan="2">Selection & Comparison</td> </tr> <tr> <td><input type="checkbox"/> US Post</td> <td><input type="button" value="↓"/></td> </tr> <tr> <td><input type="checkbox"/> Federal Express</td> <td><input type="button" value="↓"/></td> </tr> <tr> <td><input type="checkbox"/> DHL</td> <td><input type="button" value="↓"/></td> </tr> <tr> <td><input type="checkbox"/> UPS</td> <td><input type="button" value="↓"/></td> </tr> <tr> <td><input type="checkbox"/> Purolator</td> <td><input type="button" value="↓"/></td> </tr> <tr> <td><input type="checkbox"/> Emery</td> <td><input type="button" value="↓"/></td> </tr> </table>		Selection & Comparison		<input type="checkbox"/> US Post	<input type="button" value="↓"/>	<input type="checkbox"/> Federal Express	<input type="button" value="↓"/>	<input type="checkbox"/> DHL	<input type="button" value="↓"/>	<input type="checkbox"/> UPS	<input type="button" value="↓"/>	<input type="checkbox"/> Purolator	<input type="button" value="↓"/>	<input type="checkbox"/> Emery	<input type="button" value="↓"/>																
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<input type="checkbox"/> US Post	<input type="button" value="↓"/>																														
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<input type="checkbox"/> DHL	<input type="button" value="↓"/>																														
<input type="checkbox"/> UPS	<input type="button" value="↓"/>																														
<input type="checkbox"/> Purolator	<input type="button" value="↓"/>																														
<input type="checkbox"/> Emery	<input type="button" value="↓"/>																														
808																															

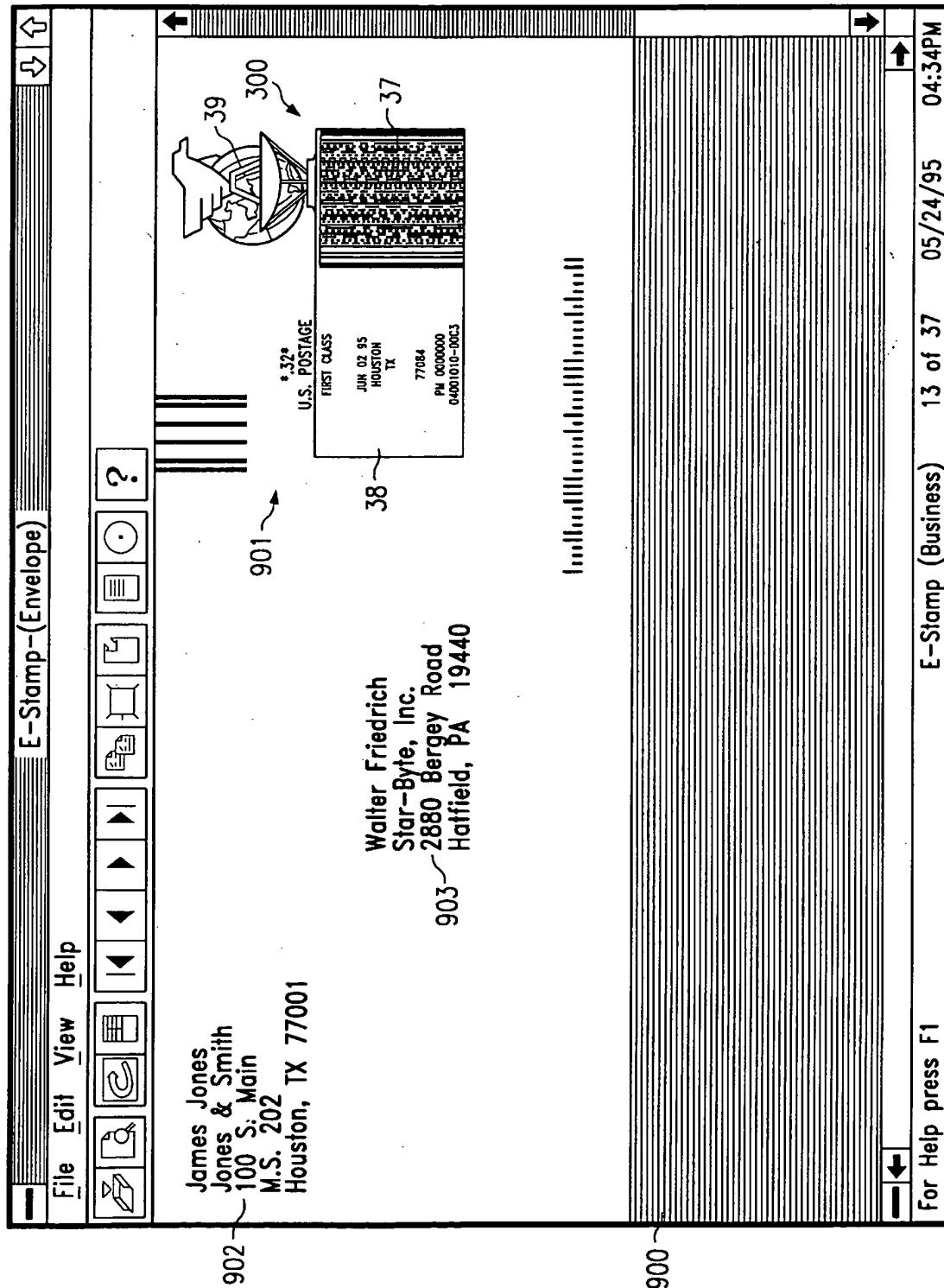
FIG. 8A

E-Stamp-(Form)

File		Edit		Layout		Help	
<input type="checkbox"/> Background On	<input checked="" type="checkbox"/> Background Off	<input type="checkbox"/> Print...	<input type="checkbox"/> Preview	<input type="checkbox"/> Print Setup...	<input type="checkbox"/> Verify Addresses	<input type="checkbox"/> Connect Other Data...	<input type="checkbox"/> ?
<input type="checkbox"/> Ctrl+P	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Suite 250	<input type="checkbox"/> Import Yellow	<input type="checkbox"/> Export Yellow	<input type="checkbox"/> Import White
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 22-2516	<input type="checkbox"/> Export White	<input type="checkbox"/> View Log file	<input type="checkbox"/> Print Log file
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Save	<input type="checkbox"/> Print Preview	<input type="checkbox"/> Log File	<input type="checkbox"/> Exit
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Delete	<input type="checkbox"/> Label	<input type="checkbox"/> Starting position: 1	<input type="checkbox"/> Set label position
Address To Name: Mr. Jack T. Trotter Company: FALCON 900 INTERNATIONAL Address 1: 1000 Louisiana, Suite 3600 Address 2: City: Houston State: TX Zip: 77002 +4: 1212 Country: <input type="checkbox"/> Browse <input type="checkbox"/> Font <input type="checkbox"/> Save <input type="checkbox"/> Add <input type="checkbox"/> Barcode to right <input type="checkbox"/> Barcode above							
Selection & Comparison <input type="checkbox"/> US Post <input type="checkbox"/> \$ <input type="checkbox"/> Federal Express <input type="checkbox"/> \$ <input type="checkbox"/> DHL <input type="checkbox"/> \$ <input type="checkbox"/> UPS <input type="checkbox"/> \$ <input type="checkbox"/> Purolator <input type="checkbox"/> \$ <input type="checkbox"/> Emery <input type="checkbox"/> \$							
Postage Calculated <input type="checkbox"/> Manual Amount Remaining: \$0.320 \$1001.680 Button OK.							
Mail Pounds <input type="checkbox"/> Ounces <input type="checkbox"/> 1 Weight: <input type="checkbox"/> Zone: LOCAL <input type="checkbox"/> Class: FIRST <input type="checkbox"/> International <input type="checkbox"/> Domestic <input type="checkbox"/> International							
Ready							
NUM							

9

FIG.



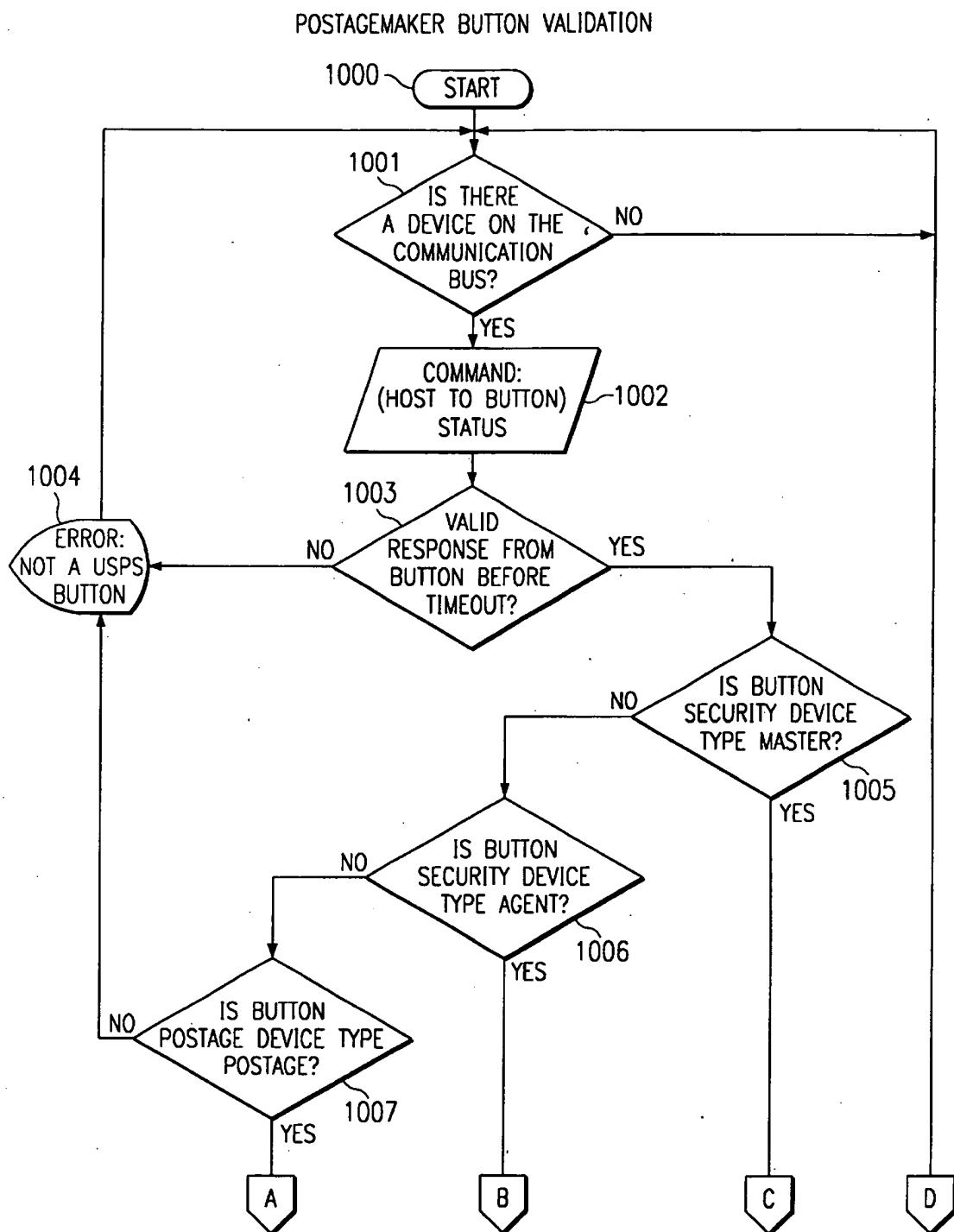


FIG. 10A

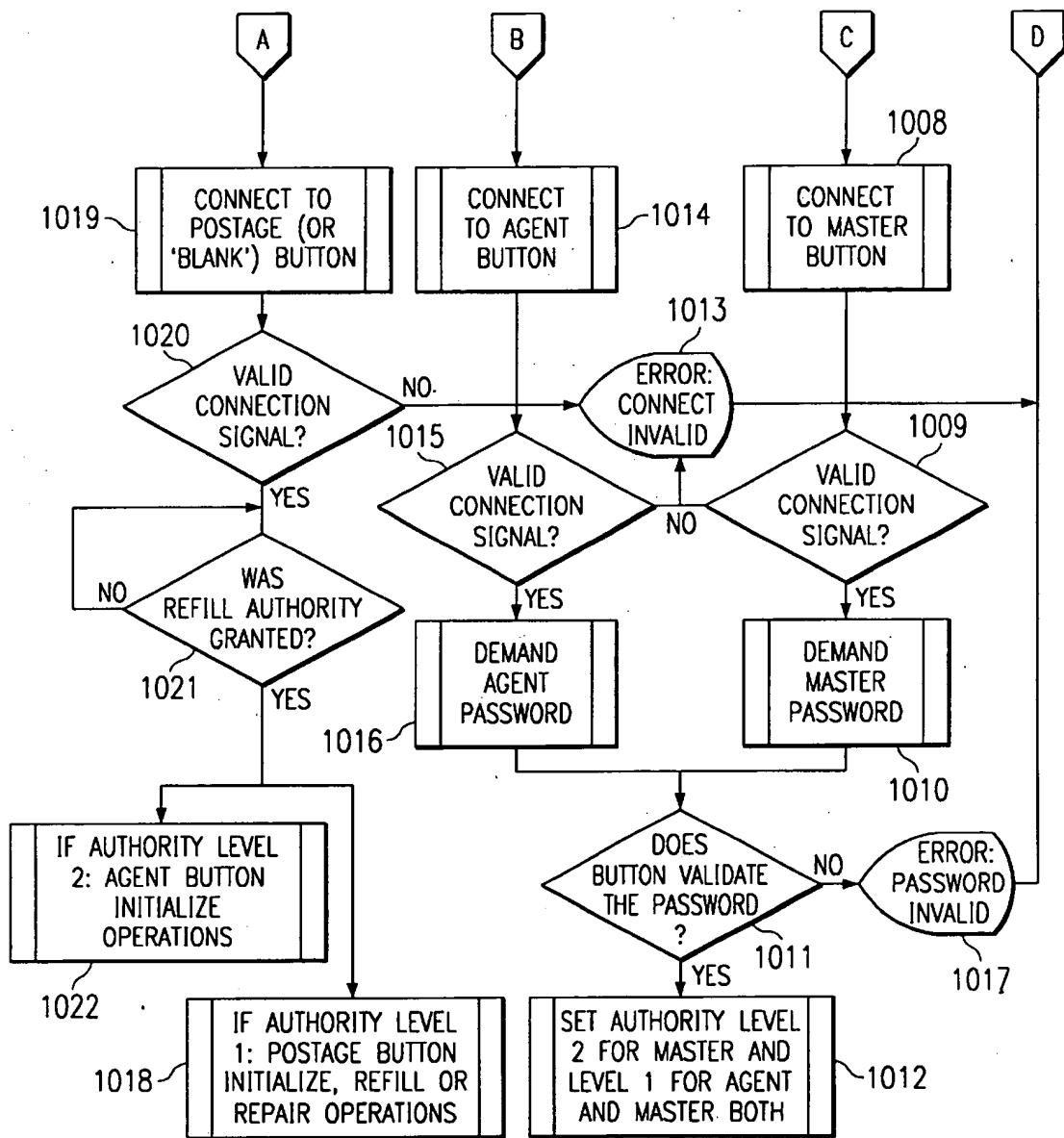


FIG. 10B

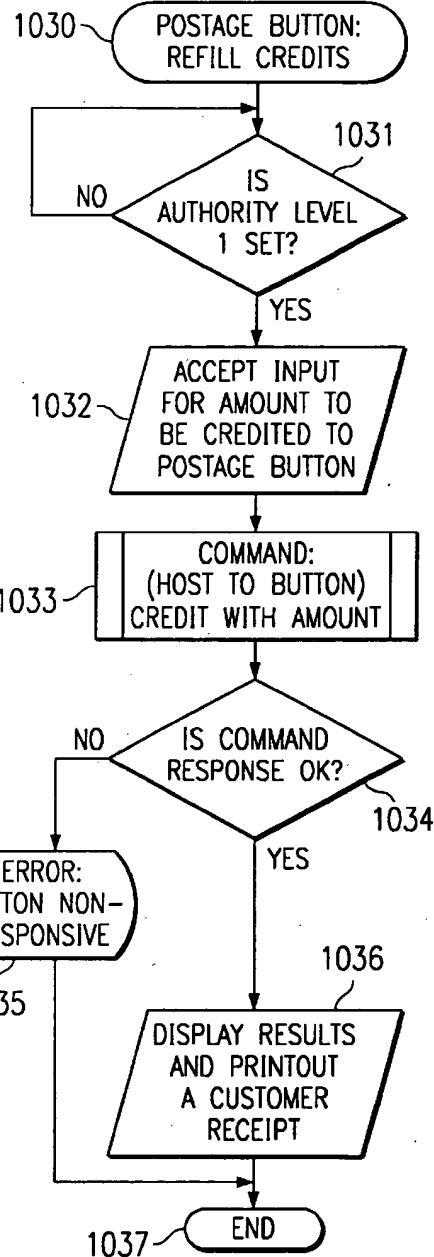
POSTAGEMAKER BUTTON
REFILL PROCESS

FIG. 10C

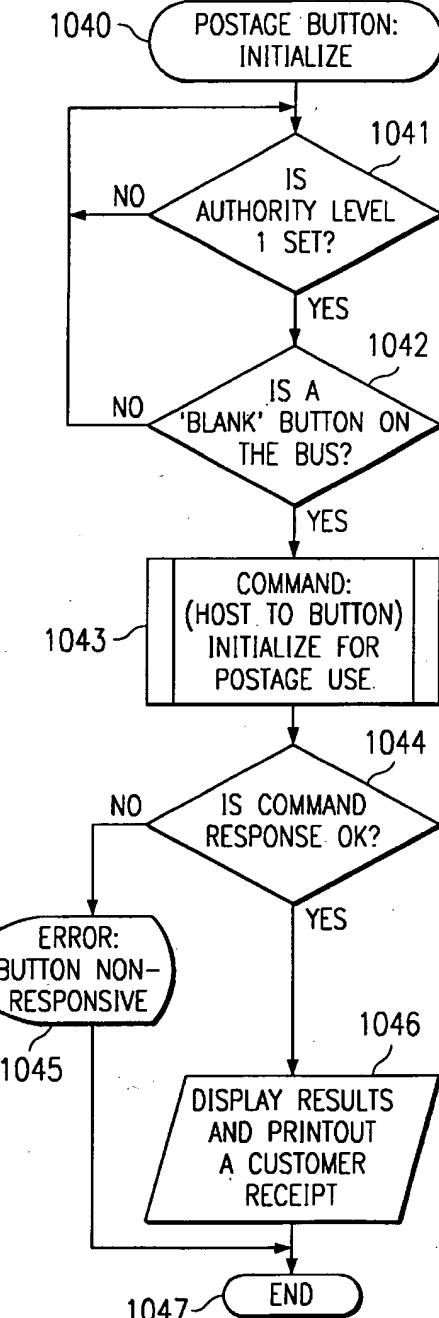
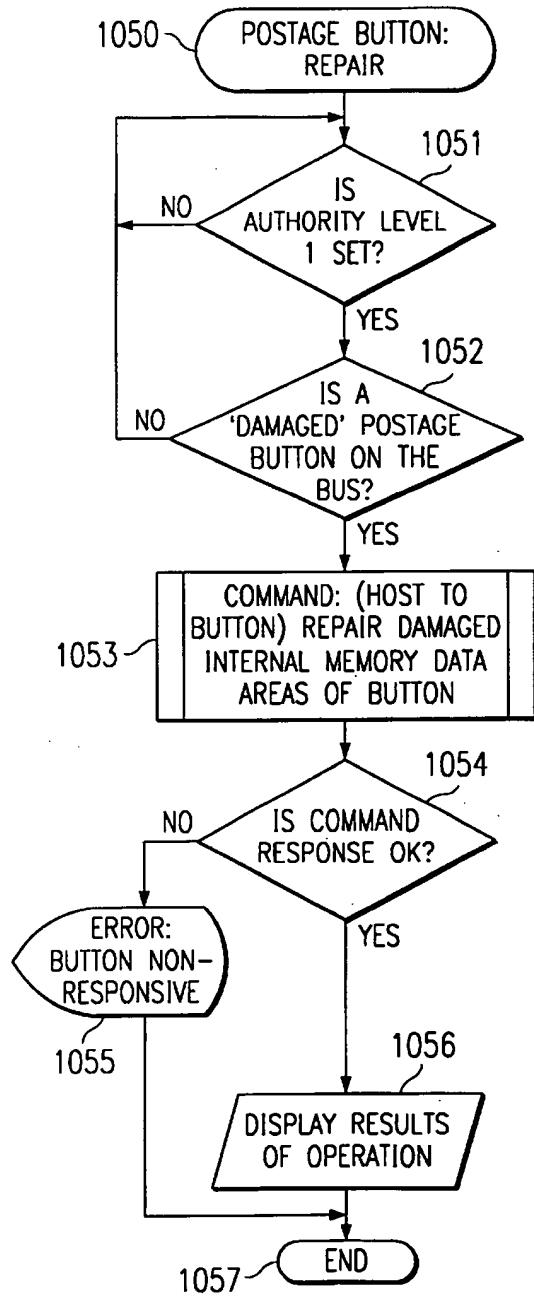
POSTAGEMAKER BUTTON
INITIALIZATION PROCESS

FIG. 10D

POSTAGEMAKER BUTTON
REPAIR PROCESS



POSTAGEMAKER AGENT
INITIALIZATION PROCESS

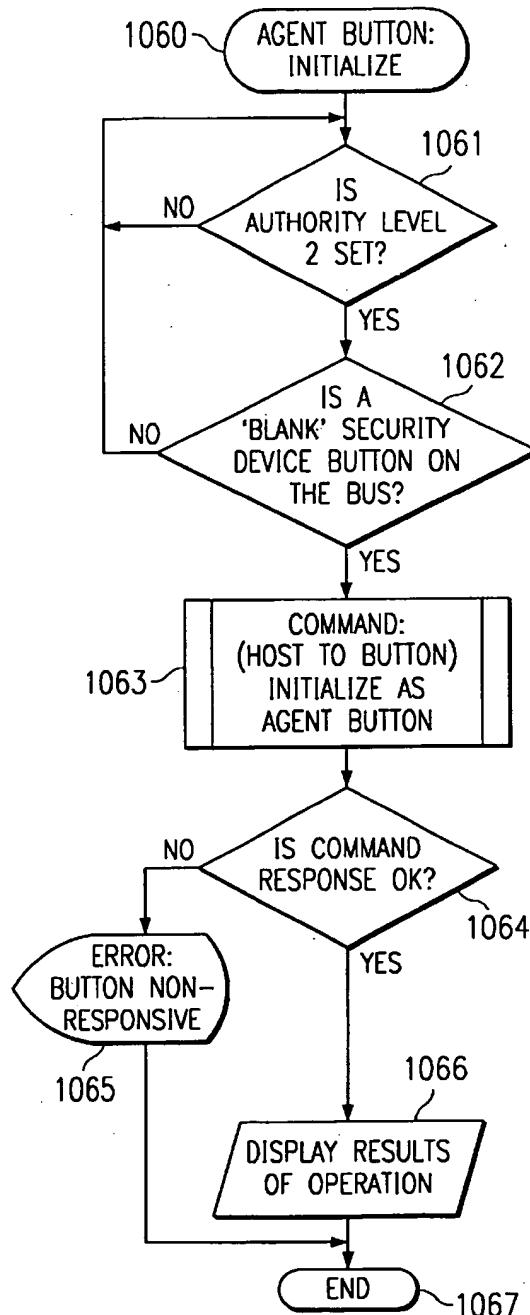
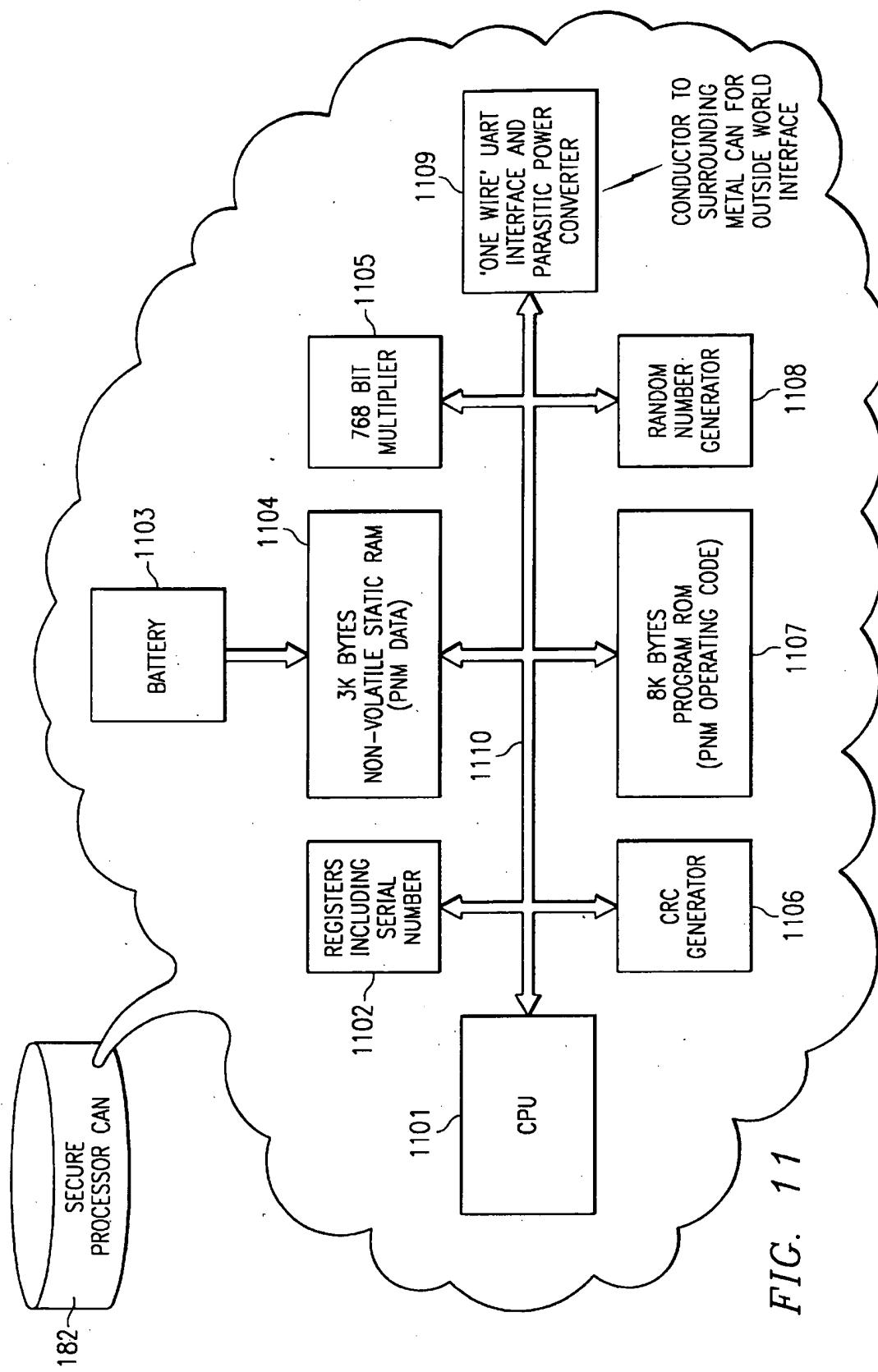


FIG. 10E

FIG. 10F



BLOCK DIAGRAM OF MEMORY LAYOUT FOR PREFERRED EMBODIMENT OF PORTABLE POSTAGE PROCESSOR

3k BYTES NON-VOLATILE STATIC RAM

CREATION DATE/TIME	CURRENT BALANCE
CREATING AGENT ID	STRIKE COUNTER
BUTTON TYPE: (POSTAGE)	BALANCE BEFORE LAST REFILL
PASSWORD	LAST REFILL DATE
USER REGISTRATION ID	LAST REFILL AMOUNT
USER NAME	LAST REFILL AGENT ID
USER ADDRESS	LAST REFILL POSTAL LOCATION ID
USER STATE	LAST REFILL STATION NUMBER
USER ZIP	TRANSACTION LOG
USER PHONE	EVENT LOG
USER FAX	ENCRYPTION KEYS

FIG. 12

1201

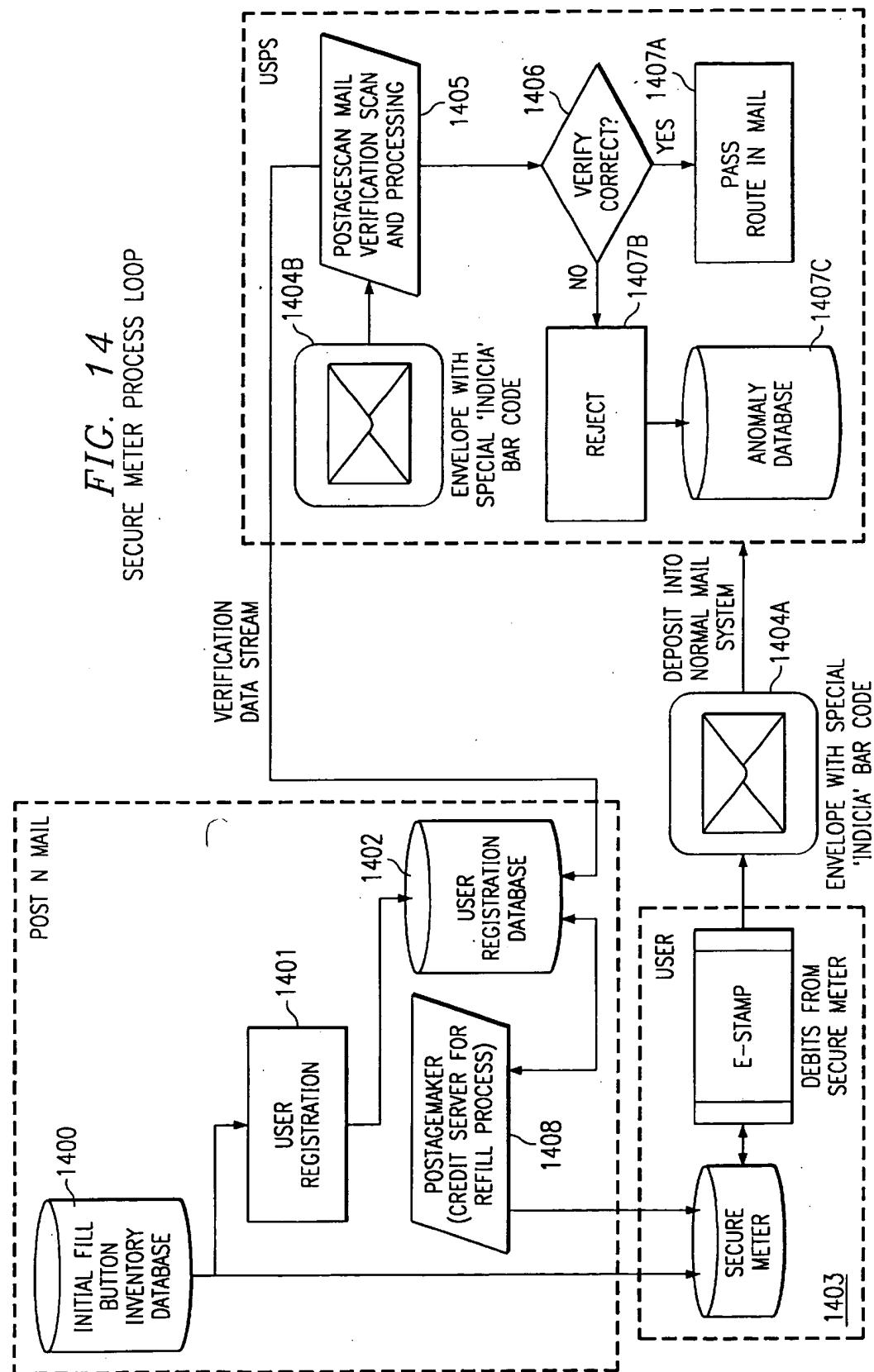
BLOCK DIAGRAM OF MEMORY LAYOUT FOR PREFERRED EMBODIMENT OF PORTABLE SECURITY DEVICE PROCESSOR FOR AGENT AND MASTER

3k BYTES NON-VOLATILE STATIC RAM

CREATION DATE/TIME	TRANSACTION LOG
CREATING MASTER ID	EVENT LOG
BUTTON TYPE: (AGNT OR MSTR)	ENCRYPTION KEYS
PASSWORD	
AGENT REGISTRATION ID	
AGENT NAME	
AGENT LOCATION ADDRESS	
AGENT STATE	
AGENT ZIP	
AGENT PHONE	

FIG. 13

1301



1

**SYSTEM AND METHOD FOR
AUTOMATICALLY PROVIDING
SHIPPING/TRANSPORTATION FEES**

REFERENCE TO RELATED APPLICATIONS

The present application is a continuation-in-part of pending application Ser. No. 08/796,275, entitled "SYSTEM AND METHOD FOR PROVIDING DISPOSABLE ELECTRONIC POSTAGE," filed Feb. 7, 1997, now U.S. Pat. No. 5,774,886 which in turn is a continuation application of application Ser. No. 08/639,847, entitled "SYSTEM AND METHOD FOR STORING POSTAGE IN A COMPUTER SYSTEM," filed Apr. 19, 1996, now U.S. Pat. No. 5,682,318, which is a continuation application of application Ser. No. 08/176,716, entitled "SYSTEM AND METHOD FOR AUTOMATICALLY PRINTING POSTAGE ON MAIL," filed Jan. 3, 1994, now U.S. Pat. No. 5,510,992, the disclosures of which are incorporated herein by reference.

Reference is hereby made to co-pending and commonly assigned U.S. patent applications application Ser. No. 08/725,119, entitled "SYSTEM AND METHOD FOR REMOTE POSTAGE METERING", filed Oct. 2, 1996, now U.S. Pat. No. 5,822,739 application Ser. No. 08/965,069 entitled "SYSTEM AND METHOD FOR PROVIDING FAULT TOLERANT TRANSACTIONS OVER AN UNSECURED COMMUNICATION CHANNEL," filed Nov. 5, 1997, application Ser. No. 08/812,803, entitled "SYSTEM AND METHOD FOR CONTROLLING THE DISPENSING OF AN AUTHENTICATED INDICIA," filed Mar. 6, 1997, now U.S. Pat. No. 5,796,834 which is a continuation application of pending application Ser. No. 08/516,010, entitled "SYSTEM AND METHOD FOR CONTROLLING THE DISPENSING OF AN AUTHENTICATING INDICIA," filed Aug. 16, 1995, now U.S. Pat. No. 5,778,079 which is a continuation-in-part application of application Ser. No. 08/263,751, entitled "SYSTEM AND METHOD FOR STORING, RETRIEVING AND AUTOMATICALLY PRINTING POSTAGE ON MAIL," filed Jun. 22, 1994, now U.S. Pat. No. 5,606,507, which in turn is a continuation-in-part application of application Ser. No. 08/176,716, entitled "SYSTEM AND METHOD FOR AUTOMATICALLY PRINTING POSTAGE ON MAIL," filed Jan. 3, 1994, now U.S. Pat. No. 5,510,992, the disclosures of which are all incorporated herein by reference.

TECHNICAL FIELD OF THE INVENTION

This invention relates in general to the provision of and accounting for fees associated with the pick-up, shipping, and delivery of articles, such as mail, via services such as a postal system. More particularly, the invention relates to a system and method under the control of a computer for automatically establishing payment of fees, such as through the use of an indicia that can be used to authenticate a postage or similar transaction, or the obligation to pay such fees, for a plurality of shipping service providers.

BACKGROUND OF THE INVENTION

Presently, it is common for individuals or businesses to have residing within their offices a postage meter rented from a commercial business. This arrangement is very convenient, since letters may be addressed, postage applied, and mailed directly from the office without requiring an employee to physically visit the U.S. Post Office and wait in line in order to apply postage to what is often a quite significant volume of outgoing mail, or to manually apply stamps to each piece of mail.

2

Quite naturally, postage meters were developed to relieve the manual application of stamps on mail and to automate the above process. Nevertheless, a postage meter residing within an office is not as convenient and efficient as it may first seem to be. First, a postage meter may not be purchased, but must be rented. The rental fees alone are typically not insignificant. For a small business, this can be quite an expense to incur year after year. Second, a postage meter must be adjusted, serviced and replenished manually; e.g., 5 each day the date must be adjusted manually, periodically the stamp pad must be re-inked, and when the amount of postage programmed within the postage meter has expired, the postage in the meter must be replenished. To be replenished, a postage meter must be manually unplugged, 10 placed into a special case (the meter is of a significant weight), and an employee must visit a U.S. Post Office to have the meter reprogrammed with additional postage. Upon arrival at the U.S. Post Office, a teller must cut the seal, replenish the meter with a desired amount of postage, and 15 reseal the meter before returning it to the employee. The meter must then be returned to the office and powered up. 20

Thus, in addition to the monthly rent, the servicing and replenishing of the meter requires the time and expense of at least one employee to take the meter to the U.S. Post Office 25 to have it replenished. Of course, this procedure results in down-time wherein the postage meter is not available to the business for the application of postage to outgoing mail. In addition, because of the monthly rent and the size of these devices, it is generally not practical for businesses to have more than one postage meter to alleviate this down-time.

Another type of meter, offered at slightly more expense, works in the following manner: 1) a user sets up an account with the meter owner, 2) 7 to 10 days before a user requires more postage, the user deposits with the meter owner the amount of postage required, 3) the user then calls the owner (7 to 10 days later) and they issue instructions as to the manual pushing of a variety of buttons on the meter (programming) which will replenish the postage amount on the meter. Nonetheless, the meter must be taken to the Post 30 Office every 6 months for servicing in order to detect any tampering.

Lastly, there is nothing inherent in the postal meter system which inhibits fraud. Accordingly, there may be a considerable amount of revenues lost for a postal service, or other item shipping service provider, before meter fraud is detected.

An alternative to the above mentioned postage meters available to a business, especially a small business, is to forego the advantages of a postage meter and to buy sheets, or books, of stamps. Without a doubt, this is not a sufficient solution. Since a variety of denominations of stamps are generally required, applying two 29¢ stamps to a letter requiring only 40¢, will begin to add up over time. 55 Additionally, it is difficult for a business to keep track of stamp inventories and stamps are subject to pilferage and degeneration from faulty handling. Moreover, increases in the postal rate (which seem to occur roughly every three years) and the requirement for variable amounts of postage for international mail, makes the purchase of stamps even 60 more inefficient and uneconomical.

Because of different postage zones, different classes of mail, different postage required by international mail and the inefficiency of maintaining stamps within an office, it is 65 important to have an automatic postage system, such as the aforementioned inefficient and relatively expensive postage meter.

Moreover, there may be a variety of item shipping or delivery service providers, each of which requires payment for pick-up, transportation, and/or delivery of items according to different schedules and terms. Accordingly, to automate shipping of items via ones of these services may require a business to rent or purchase, and operate and maintain a variety of metering devices, or other equipment such as printers for waybills, manifests, or bills of lading, in order to have the flexibility to ship items via these various services.

Often shipping items via different services is desired due to such considerations as the availability of a particular service offered, guaranteed delivery day or time, tracking of shipped items, delivery enhancements including C.O.D., certified, or return receipt, as well as cost considerations. However, a small business may forgo the flexibility to choose a shipper based on such considerations due to the expense and complexity of implementing the infrastructure necessary to utilize the various services. Moreover, a typical casual user of shipping services will not invest the time into determining the particular shipper and/or service offered which most closely satisfies the user's needs and desires.

Additionally, the shipping service providers may be hesitant to offer or provide automated metering, or other such equipment, to less than heavy commercial users of their service due to expense, training, and support issues. Accordingly, such shipping service providers may not effectively leverage a potentially large portion of their potential market and, instead, rely on less convenient and, thus, less likely to be utilized manual and/or difficult to use methods of providing service to this portion of the market. Additionally, such systems may present fee collection problems as the shipping service providers may have to establish accounts, either prepaid or postpaid, in order to service these accounts. Postpaid accounts may introduce latencies in actually receiving payment for services already rendered in addition to the inability to collect for some services rendered. Prepaid accounts, although alleviating risks involved with collecting fees for services already rendered and latencies in receiving payment, introduces costs in handling such accounts.

Accordingly, there is a need in the art for a system and method that provides the automatic placement of postage or other proof of payment or obligation to make payment for services, i.e., conducting a credit transaction without deducting a value from a credit balance (credit transaction), associated with item shipping/delivery on mail and other items at locations other than a U.S. Post Office or other shipping service provider, while not requiring the use of a traditional postage meter. There is a further need in the art for such a system to provide for the placement of such proof of payment or obligation to make payment for a variety of different shipping/delivery services in order that a user may select a delivery service provider and/or particular service most advantageous to that user's needs and desires.

However, one major problem with any system in which a single apparatus is utilized in conjunction with providing accounting for fees associated with a plurality of different service providers is the maintenance of strict controls on the "filling" of the memory with value credit and/or tracking the fees to be paid authorized by the apparatus. Any such controls should have as a component the ability to create an audit trail and the ability to withstand unauthorized usage.

Another problem facing any system storing and authorizing postage or other proof of payment is that the system should optimally interface with a user friendly operating

environment that is flexible and can be coupled to other programs such as a word processing or graphics program.

It is a primary object of this invention to provide a system and method to dispense postage, or other proof of payment or obligation to make payment, in a secure manner so that it can be authenticated on a piece-by-piece basis.

It is a further object of this invention to dispense postage, or other proof of payment or obligation to make payment, authorized for use with and by a variety of service providers.

10 Another object of the invention is allow the comparison of fees/charges as between various ones of the service providers in order to provide a user with sufficient information to select a shipping/delivery service provider and/or particular service best suited to the needs and desires of the users.

15 A further object of the invention is to provide a system and method which may be managed by a single service provider although providing authorized proof of payment for a variety of service providers.

SUMMARY OF THE INVENTION

20 These and other objects and advantages are present wherein a portable device is constructed with a memory and having a processor controlling that memory. The device is arranged to communicate with a general purpose processor-based system, such as a personal computer (PC), in order to exchange instructions therewith.

25 The portable processor device has on board certain security related fields, such as the date and time, the balance, random number generators, number of transactions that have taken place on the device, and the serial number of the device. It also has on board when the user initializes the device, information about the owner of the device including his/her name, the registration number and other information about the owner such as the user's address and password.

30 When the device is used and a transaction is about to be debited from the device or an indication of an obligation to pay for shipping services (credit transaction) is about to be stored in the device, information about the transaction, such as the debit or credit amount and/or other transaction information that is postage or shipping related, such as the addressee's ZIP code, the addressee's ZIP code, the recipient's address and name, the mail class, etc., are uploaded to the device from the PC. The processor stores them in memory, then it takes this information, the owner information and transaction information and preferably digitally signs them in a security packet, using its own key which is on board the device (it is not given externally). Once the debit or credit transaction has taken place, the device gives data back to the PC in digitally signed form. The PC then takes that information and packages it into an indicia in the form of a portable data file so that the digitally signed information can then be authenticated by the authenticating agency at pick-up, during shipment, or after it has been delivered along with a document or other associated item.

35 55 The processor device preferably stores an amount of credit from which the debit amount is deducted. This credit is accessible only through the processor of the device and, thus, is secure. Accordingly, a single trusted service provider, such as the United States Postal Service, may 60 exclusively possess the corresponding apparatus and methods in order to refill or otherwise increment the stored credit upon payment by a user. As such, additional service providers may delegate the implementation of such an automated system to this trusted service provider and receive 65 payment of fees therefrom when the transaction information stored by the device indicates use of such other service providers.

Of course, other service providers may be provided access to the internal workings of the device for direct management of transactions associated with such service providers. For example, an alternative embodiment of the invention provides a plurality of separate stored credits associated with ones of the various service providers. Accordingly, trust among the various service providers need not be relied upon as each such service provider may implement different schemes or other methods of protecting stored credit and/or other data relevant to transactions associated with the particular service provider.

A preferred embodiment of the present invention is adapted to conduct and account for the aforementioned credit transactions through printing an indication of an obligation to pay for the services desired and storing information regarding this obligation within the portable memory and/or a host system coupled thereto. Accordingly, the portable memory may actually hold or store no credit balance, at least with respect to shipping service providers allowing such credit transactions or for which a user has tendered a suitable deposit to the service provider from which such "credit" transactions may later be deducted. However the system will still preferably operate to create the aforementioned indicia which can then be authenticated by the authenticating agency at pick-up, during shipment, or after it has been delivered along with a document or other associated item. Accordingly, proof of the details of the transaction, preferably included in the indicia, may be confidently authenticated or provided such as by a digital signature included in the indicia. Moreover, the shipping service provider may be provided with more complete and accurate information regarding the transaction by simply scanning the indicia.

Preferably, the shipping service provider using such a credit or indication of obligation to pay system implements scanning of each of the printed indicia, as opposed to possibly only scanning a random sampling to detect and deter fraud. Accordingly, a shipping service provider may provide the indicated service only if the indicium is scanned successfully. A billing system may be implemented such that any successfully scanned indicium is considered a service order and the user is charged accordingly.

In an alternative embodiment of the present invention, the system is arranged to automatically calculate the correct postage associated with or to place on a letter, parcel or label as a function of the class, zone, weight, and the like of the particular item to be shipped. One embodiment of the present invention includes a balance coupled to the host processor-based system so that items to be shipped can be placed on the balance and the weight of the item automatically entered into the system for calculating the correct shipping fees for that item. Another embodiment relies on item generation information provided by a coupled process utilized in creating the item, such as a word processor, in order to determine a weight of the item.

Preferably, the invention operates to provide a user with information regarding shipping an item via ones of the available shipping service providers in order that the user may make an informed decision as to which such provider to choose for a particular transaction. For example, the user may make selections, such as a zone, delivery schedule, and shipping weight, and be presented with the fees and other information, such as service limitations, insurance availability, additional services, etc., associated with various ones of the shipping service providers associated with these particular selections. Thereafter, the user may select a particular shipping service provider and/or a particular service

offered by the shipping service provider and the invention operates to print an indicia or other proof of payment or obligation for payment, i.e., a valid waybill including user number and transaction number indicating authorization for the shipping service provider to provide the service for the designated fee.

In another preferred embodiment of the present invention, the display screen coupled to the processor-based system employs a "WINDOWS" (general purpose graphical user interface) type display for interfacing with the user. Through the display screen, the program will request a password from the user and the amount of postage or other fees or information the user wishes to apply to a piece of outgoing mail or corresponding label for subsequent application to a package or envelope. The user will enter the desired amount of postage, fees or other information; the program will retrieve this postage stored within the portable processor, and the E-STAMP (indicia creator) (indicia creator) program will print postage indicia or other authorization information through a coupled printing device onto the outgoing mail or label.

In still yet another preferred embodiment of the present invention, the program may be coupled to another process, such as a word processing, accounting, or spreadsheet program, residing within the processor-based system. As a result, the application of the postage indicia or other authorization information may be made in conjunction with the other process, which has capabilities, such as to print envelopes, separately or in conjunction with the printing of a corresponding letter or to otherwise supplement the printing of the postage indicia or other authorization information.

Furthermore, the system may also be programmed to print the address, return address and postage indicia or authorization information on documentation, such as a waybills, manifests, bills of lading, correspondence, etc. This printed documentation can then be placed in envelopes with cutouts, glassine paper, or the like at the appropriate areas so that the address, return address and/or meter stamp can be viewed through the envelope.

In another preferred embodiment of the present invention, the aforementioned portable processors are specially manufactured by Dallas Semiconductor for use in conjunction with programs, i.e., unique serial numbers specific to the program are embedded within each portable processor button. These serial numbers are then recorded in a user registration database for use by the Post Office or other shipping service provider and the software to scan and verify letters. Thus, a form of security is provided since only the portable processors specially manufactured for use with the E-STAMP program are able to receive or retrieve data pertaining to postage amounts, as previously described.

Additionally, a special user-defined password may be dedicated for use with the programs so that access is only provided to users entering the correct password. The aforementioned serial numbers and passwords may, in addition to protecting against unauthorized use, also allow a user and the service providers to track postage used by every company, department, employee, etc. Furthermore, other software programs may also be configured to access the control program so that spreadsheets and/or graphs may be produced providing statistics on postage use within a business.

Furthermore, the control program can be used to encode a variety of information within the postage indicia or other authorization information using bar code symbol technology. Such information would be machine readable and can

be used to identify forgeries, in combination with the established control database of active system users.

When the portable processor memory is refilled, the recorded transaction information can be analyzed either from the perspective of management information or to try to detect fraud. This allows for authentication or verification at a point remote (both physically and electronically) from the user and remote from the PC and even remote from the portable processor. Additionally, at this time a single service provider, such as the United States Postal Service, may account to other service providers for transactions authorized by the portable processor memory, or otherwise provide transaction information thereto.

It is one technical advantage of this invention that the most vital security-related pieces of the system are performed on board the portable processor so that it is not very easily tampered with.

It is another technical advantage of this invention that the portable postage devices are easily transported from one standard computer to another.

It is another technical advantage of this invention that the portable postage storage devices are durable, long lasting and economical. One method of accomplishing this is to use a portable processor with a hardened case, not allowing direct contact with the processor. In this way, the code which defines the personalizing of the processor remains secret and cannot be disassembled.

It is another feature of this invention to provide a system and method that as transactions take place the portable memory records information about each transaction and maintains a log of the most recent transactions. Accordingly, transaction records or logs may be maintained securely for later use such as in detecting fraud or tampering as well as providing an audit trail.

Additionally or alternatively, such transaction information may be stored in an audit log external to the portable memory, such as on the host system or other durable storage device. Preferably the same digital signature created for the debit or credit transaction authorized by the portable memory are stored along with this transaction information in order to validate the transaction information and keep it secure. Accordingly, any missing records or false records may easily be detected through validating the digital signature against its associated transaction information and/or other transaction information.

In one embodiment, it is a technical advantage of the invention that it presents an entire system and method for dispensing postage or other authorization information electronically using a portable processor and refilling of the portable processor through the use of a secure credit server with the transformation of a combination of credits and information about the portable processor user into a graphical security interface, such as a printed postage indicia, entitling the user to obtain an official transaction or service at a point detached from both the processor and the user (such as the sending of a parcel in the mail system).

Another technical advantage is provided in an embodiment of the present invention as transactions may be authorized without the storing of a credit balance, such as on the aforementioned portable memory, which may be lost, stolen, or otherwise fail. Additionally, no money may actually be transacted if the indicia or other proof of obligation to make payment is not scanned, i.e., the accompanying item is lost in shipment etc.

It is a further technical advantage of the invention that a single method and system may be deployed, and subse-

quently maintained, which provides for the trusted authorization of services by a plurality of service providers. Thus expenses associated with apparatus, training, and maintenance may be reduced. Furthermore, users are provided with information with respect to the offerings of ones of the various service providers for an informed choice of service providers and/or particular services most compatible with their needs and desires with respect to a particular transaction.

- 5 10 The foregoing has outlined rather broadly the features and technical advantages of the present invention in order that the detailed description of the invention that follows may be better understood. Additional features and advantages of the invention will be described hereinafter which form the subject of the claims of the invention. It should be appreciated by those skilled in the art that the conception and the specific embodiment disclosed may be readily utilized as a basis for modifying or designing other structures for carrying out the same purposes of the present invention. It should 15 also be realized by those skilled in the art that such equivalent constructions do not depart from the spirit and scope of the invention as set forth in the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

- 20 25 For a more complete understanding of the present invention, and the advantages thereof, reference is now made to the following descriptions taken in conjunction with the accompanying drawings, in which:

FIG. 1A illustrates a host processor-based system for implementation of the present invention;

FIG. 1B illustrates several embodiments of the postage storage device;

FIG. 2 illustrates an embodiment of user instructions and screen prompts utilized by the present invention to interface with a user when installing the program on the processor-based system for implementation of the present invention;

FIG. 3A illustrates one embodiment of a user registration form;

FIG. 3B illustrates a postal or verification indicia;

FIG. 3C illustrates an encoded user registration form;

FIGS. 4A-4O illustrate display screens utilized by the present invention to interface with a postal authority employee when replenishing postage within the present invention;

FIGS. 5A and 5B illustrate flow diagrams of the replenishing and debiting processes;

FIG. 6 illustrates a preferred embodiment of the security techniques utilized within the present invention;

FIG. 7 illustrates a flow diagram of the operation of the present invention within a host processor-based system;

FIGS. 8 and 8A illustrate a display interface provided to a user when accessing the present invention on a host processor-based system;

FIG. 9 illustrates an envelope used to display the postage indicia printed on a letter;

FIGS. 10A-10F illustrate how the master, agent and postage buttons are validated;

FIG. 11 illustrates the architecture for the preferred embodiment of the portable processor;

FIG. 12 illustrates how a postage button is encoded;

FIG. 13 illustrates how an agent or master button is encoded; and

FIG. 14 shows the interrelationship of the database for registering memories assigned to users and the use of the database for verification purposes.

DETAILED DESCRIPTION OF THE
INVENTION

The present invention provides for a portable postage dispensing device, described in more detail below, that can be coupled to a host processor-based system at both the customer's site and at the postal authority, or other shipping service provider, such as a parcel delivery service or overnight delivery service, or an authorized agent. Throughout the remainder of this description, reference is made to the U.S. Post Office, postal authority or its agents. Note, however, that the present invention may be implemented within any country and with respect to any postal system or with respect to any data packet which is being examined by a validating authority detached, both physically and electronically, from its source. Likewise, throughout this description, reference is made to shipping service providers. It is intended that national and international shipping service providers such as United States Postal Service, United Parcel Service, Federal Express, Emery, DHL, Purolator Courier as well as regional or local shipping or delivery services such as bonded courier services etcetera be included. Additionally, more traditional trucking services, such as less than a truck load services, are intended to be included in the service providers which may be served by the present invention.

The present invention will allow an individual to purchase a desired amount of postage or other value credit, preferably at an authorized agent of the U.S. Post Office, such postage or credit being stored within a portable postage dispensing device, which itself is a portable processor. The user may then invoke a host processor-based system to access and retrieve a portion of the stored amount of postage or credit via a program stored on the host processor-based system, such program hereinafter referred to as the "E-STAMP" (indicia creator) program. The E-STAMP program requests input on the weight of the item to be shipped, the addressee's address, etc. The E-STAMP program utilizes the information that was entered to calculate the amount of desired postage or shipping fees for an item to be shipped and prints a meter stamp or other authorization information, indicia, on an envelope, label, letter, waybill, manifest, bill of lading, etcetera, through a printer or special purpose label maker coupled to the host processor-based system.

The portable credit dispensing device can also be coupled to a host processor-based system located at the agent authorized by the shipping service provider(s), such as a U.S. Post Office Agent. Particular post office sites and authorized agents will have installed a system complimentary to the software system installed on the customer's PC. The program installed at the U.S. Post Office, hereinafter referred to as the "POSTAGEMAKER" (credit replenisher) will allow an authorized agent to interface the portable postage dispensing device with the host processor-based system residing at the authorized refilling agent in order to replenish the amount of postage or credit programmed within the portable postage dispensing device in an amount requested and purchased by the customer or to otherwise exchange data therewith.

It shall be appreciated that, although described as portable, the storage device of the present invention may be substantially permanently coupled to a host, such as a portion of a mass storage device or a solder connected memory device. The use of such a device according to the present invention may include coupling to a remote credit granting apparatus or credit server as described in further detail below.

Moreover, although referred to herein as storing and dispensing postage, the storage device of the present invention may store credit other than or in addition to credit associated with the posting of mail items though a postal authority such as the United States Postal Service. Accordingly, the term postage credit and postage as used herein includes credit and/or indicia or authorization information associated with service providers other than a postal authority. Likewise, the present invention may operate to disperse authorizations for goods and services without the use of stored credit such as by recording the obligation to pay for such services and creating an indicia representing a service order.

Referring to FIG. 1A, there is illustrated a processor-based system (10) utilized for implementing the present invention, specifically the aforementioned E-STAMP and POSTAGEMAKER programs. System 10 includes chassis 11 enclosing processor ("CPU") 12 and disk drive 14. Coupled to CPU 12 is display 13, keyboard 15 and mouse 16. Furthermore, system 10 is adapted for coupling with a storage device 18, such as the preferred embodiment portable processor button 182 illustrated in FIGURE 1B and shown in block diagram form in FIG. 11. Storage device 18 is coupled to processor-based system 10 through a postage storage device receptor 17.

The storage device may be any securable, intelligent device having some residual data capability, where that device can provide sufficient security measures to efficiently limit access to the memory and executable code of the device to authorized users. Intelligence is defined as having a CPU or other processor and memory built into the portable processor device.

The preferred embodiment, portable processor button 182, incorporates a small disk having a memory and CPU. Portable processor button 182 is a small, light-weight, portable, essentially non-breakable device available from Dallas Semiconductor, Dallas, Tex. A portable processor button may be coupled to host processor-based system 10 through button holder 172. In a preferred embodiment of the present invention, a batch of buttons will be manufactured with specifically designated serial numbers for use solely with the present invention. However, disposable portable processor buttons 182, preloaded in various denominations, could also be sold either over the counter or in existing stamp machines at post office locations. The postal authority may also select to sell pre-loaded portable processors, on which the customer pays a deposit, that can be exchanged for another portable processor or returned for the deposit whenever button 182 is depleted of postage. All authorized postal agent locations may sell pre-loaded portable processors or the postal authority may elect to designate particular postal authority locations for selling portable processors.

An advantage of the preferred embodiment (the portable processor button 182) is that a portable processor button 182 is small enough and light enough that several may be carried in one hand. Furthermore, the portable processor button 182 is sufficiently durable to be sent through the mail. The fact that the portable processor is universally usable with PC's allows the per unit cost to be lower.

Additional alternative embodiments of storage device 18 are illustrated in FIG. 1B. One alternative storage device 18 is a smart disk 188 incorporating its own electronic modules capable of read/write operations. One embodiment of such a smart disk 188, SMART DISK, can be obtained from Smart Disk Security Corporation, Naples, Fla. The smart disk looks like a floppy disk and fits into a typical PC's

floppy disk drive 178, connected either externally or internally to host processor-based system 10; however, smart disk has its own microprocessor that provides secure, password protected storage. One advantage of the smart disk is that it can operate in a standard PC disk drive without modification to the disk drive or PC. The smart disk provides security for stored postage with an encrypted password and the encryption algorithm.

Another type of storage device 18 is a smart card 186, a plastic card with an embedded microchip. The microchip contains mathematical formulas that encrypt computer data to secure access to that data (i.e., postage) and verify a user's identity before allowing access to the data. One drawback in the currently available smart cards 186 is that they require a smart card processor 176 hooked to the processor-based system 10.

Still another type of storage device 18 is a PCMCIA card 184. PCMCIA cards are currently used on notebook computers for modular storage and communication. Both external and internal add-on readers 174 (i.e., card slots) are available for PCs.

Storage device 18 may be used on a variety of host processor-based systems 10. Host processor-based systems 10 may be located in an individual's home, at any business location, or may even be present in a post office lobby for after hour usage. In a preferred embodiment, system 10 is a PC. In an alternative embodiment, system 10 could be part of a main-frame computer or system 10 could be part of a network system of multiple host processor-based systems or could be coupled, such as through a public switched network, to a remote system, such as the aforementioned authorized credit server.

Typically, a user will buy a storage device 18, containing a small quantity of postage, included with a copy of the E-STAMP program. The user will then install the E-STAMP program on the user's host processor-based system 10.

FIG. 2 illustrates one embodiment of user instructions and screen prompts to be followed by the user during the installation of the E-STAMP program. The instructions and screen prompts illustrated in FIG. 2 reflect the installation of the E-STAMP program in a MICROSOFT WINDOWS general purpose graphical user interface operating environment on a PC equipped with a portable processor TMU button 182 and portable processor TMU holder 172. Of course, other means could be employed for implementing the present invention within a host processor-based system 10.

The user installation instructions 201 inform the user how to pull up the E-STAMP installation program. Once the installation program is initiated, screen 203 will appear. Screen 203 instructs the user to connect the TMU holder 172 to a PC input/output port, such as a serial or parallel port, and to insert the TMU button 182 into the holder 172. The user is then instructed to turn on a printer 19 that has been coupled to the processor-based system 10 and check to see that the printer 19 is supplied with paper. Screen 203 further requests that the user prepare the following information: the user's full name and address, an identification number for the user (i.e., an employer identification number (EIN#), if the user is a business or organization; or a social security number (SS#), if the user is an individual), the user's ZIP code, the user's telephone number and the user's fax number.

The next screen, screen 205, displays the License Agreement with its legal terms and conditions. Acceptance of the terms and conditions set out in the license agreement is indicated when the user continues with the installation program.

Next, screen 207 will appear and display the E-STAMP serial number and TMU serial number. At this time the user-specific information requested in screen 203 should be entered into the E-STAMP program. Once the user has entered the user-specific information, screen 209 will appear warning the user to carefully verify the correctness of the entered information.

After verifying the information added into the E-STAMP program, screen 211 will remind the user to ensure that a coupled printer 19 is on line. The user information entered into the E-STAMP program will then be incorporated into a user registration form, one embodiment of which is illustrated in FIGS. 3A, 3B and 3C. The E-STAMP registration form will be printed in triplicate. The user is instructed to sign and mail two copies of the registration form to the creator of the E-STAMP program, or other authorized agent, and to retain one copy of the registration form. Screen 211 also informs the user that a registration card will be mailed to the user in order that the user may access TMU refilling stations or other authorized credit server.

The E-STAMP installation program continues with screen 213, which describes the progress being made in installing the E-STAMP program, and screen 215, which informs the user when the E-STAMP program installation has been completed.

Referring to FIG. 3A, there is illustrated a preferred embodiment of the E-STAMP registration form. The registration form includes information such as the portable processor button serial number 31, the E-STAMP serial number 32, the date and time that the E-STAMP program was installed 33, and user-specific information 35 (e.g., name, address, telephone and fax numbers, and identification number), and a copy of the License Agreement 38 having an identified location for the user to sign. A preferred embodiment of the E-STAMP registration form will also contain all of the information needed to specifically identify the TMU button, E-STAMP program, and registered user in an encoded format, such as code 301 of FIG. 3C. The encoded information 301 will preferably be in a machine-readable graphical security interface, such as a standard bar code. In the preferred embodiment, the code would be the PDF417 code discussed in more detail below.

As will be discussed, indicia 300 shown in FIG. 3B also has a logo portion 39 and a printed "human readable" portion 38 as well as an encrypted portion 37. It is this portion 37 which is read and, if desired, compared to a database at a location remote from the user, remote from the generating PC and remote from the portable processor.

The standard bar code contains white and dark areas in the form of bars that can be read by a laser scanner. The laser scanner illuminates the white and dark areas with a light of a certain frequency. The light is reflected back to the laser scanner in such a way as to indicate the pattern of white and black areas within the bar code. Since white areas reflect much more light than dark areas do, a perpendicular scan of the bar code will allow the scanner to translate the reflected light into the coded information. More than 20 linear bar code languages have been developed, each with its own specifications for how many bars and spaces make up a character, how characters are to be arranged, whether the characters can be letters as well as numbers, and so forth. The most widely-used bar code is the Universal Product Code (UPC) seen on everyday grocery items. The standard bar code currently used by the post office is POSTNET ZIP+4 described in Postal Service Publication number 67.

More sophisticated graphical security interfaces have been developed over the last decade, such as Intermec

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Corporations' Code 49 and Laserlight System Inc.'s Code 16K. A major advantage of these more sophisticated graphical security interfaces is that they contain an error-correction formula which can often recover the entire message even if parts of the code have been torn or damaged.

A preferred embodiment of encrypted information 301 is a graphical security interface developed by Symbol Technologies of Bohemia, New York and is called PDF417, a portable data file. PDF417 is a graphical security interface constructed from data units called "words," each of which is 17 modules long. Bars are made from filling in up to six consecutive modules and each unit has four separate bars and four spaces. In essence, PDF4 17 can stack the equivalent of up to 90 one-dimensional bar codes, each just three hundredths of an inch high. Thus, the PDF417 symbology is more complicated to produce and scan than is the typical one-dimensional bar code and allows for a denser coding of information. Because the PDF417 symbology specification includes sophisticated protocols for error-correction, the actual density of information is highly variable, but can be ten times the amount of information found in United States Postal Service POSTNET bar code, per square inch. PDF417 is available from Symbol Technologies, Inc., 116 Wilbur Place, Bohemia, N.Y. 11716 and the operation of the PDF417 is detailed in PDF Primer obtained from them and is hereby incorporated herein by reference.

When the system administrator, receives the signed License Agreement from the user, the encrypted information 301 can be scanned with a laser scanner so that the information contained therein can be automatically transferred to a Registered User's database. The purpose of this database will be more fully discussed below. When the encrypted information 301 has been transferred to the registered user's database, a registration card containing a serial number will be printed and mailed to the registered user. The valid entry of the user registration information in the registered user's database guarantees that user's mail, or other items, to pass verification at the U.S. Post Office or other shipping service provider, for scanning equipment will preferably be connected to the database, or a copy thereof, for real-time verification of mail or shipment of items.

Of course, separate registered user databases may be maintained for the different shipping service providers a particular user or storage device is authorized to utilize according to the present invention. For example, in the information provided by the user at time of initialization or registration may be information with respect to particular service providers from which service is desired. Accordingly, the appropriate registration information may be parsed from the registration information for inclusion in particular databases associated with these selected service providers and, thereafter, provided to the service providers for real time verification of items shipped.

System 10 may be utilized at a customer site for permitting a user to retrieve postage, or other credit, stored within storage device 18, via the E-STAMP program, for subsequent printing as a postage indicia or other authorization information onto a piece of mail through printer 19, coupled to system 10. Likewise, system 10 may be utilized at a customer site for permitting a user to print information indicating an obligation to pay for selected services (credit transaction), rather than actually printing an indicia of payment, while storage device 18 securely retains transaction information therein for later auditing and/or assessment of monies due. Of course, as described above, system 10 may additionally or alternatively store transaction information, such as in disk drive 14, for later auditing

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and/or assessment of monies due. The utilization of the E-STAMP program by a customer will be further described below.

5 POSTAGEMAKER FUNCTIONALITY DESCRIPTION

Referring to FIG. 4A, there is illustrated a preferred embodiment of a display screen 40 shown on display 13 (FIG. 1A) to a postal agent when accessing the present invention on system 10 for management functions such as refill of credit. Of course, the particular display aspects illustrated in FIG. 4A may be modified in any one of numerous ways. Also, in a preferred embodiment of the present invention, host processor-based system 10 will provide for input from a user via keyboard 15 and mouse 16. However, other various forms of input may be utilized, such as a light pen or touch-sensitive screen (both not shown).

Alternatively, the value incrementing aspect of the present invention may be adapted so as to be fully or substantially automated and thus operate substantially free of operator input. In such an embodiment, a user's system 10 may be coupled, such as through modem 101 and PSN 102, to the POSTAGEMAKER program executing on a system 10 disposed in a secure environment, or otherwise adapted so as to prevent unauthorized access and/or interception and utilization of communicated information, such as through password protection, secure handshake, and/or encryption. Preferably, communication between such systems 10 to conduct refill and other transactions is accomplished utilizing fault tolerant techniques such as shown and described in the above referenced patent application entitled "SYSTEM AND METHOD FOR PROVIDING FAULT TOLERANT TRANSACTIONS OVER AN UNSECURED COMMUNICATION CHANNEL," previously incorporated herein by reference.

Accordingly, a user, or the E-STAMP program, may determine a point at which it is desired to increment a credit amount, or otherwise update information, stored in the portable memory and establish an information communication link between a system 10 executing the POSTAGEMAKER program and a system 10 executing the E-STAMP program. Thereafter, the desired credit amount may be incremented, information reflecting the obligation to pay for shipping services, i.e., credit transaction data, may be communicated, and transaction information or the like may be exchanged. It shall be appreciated that such an exchange of data may be fully automated, such as to occur as needed, i.e., when a stored credit or a total amount of an obligation to pay for previously rendered services reaches a threshold value, at particular times, i.e., off peak communication network hours, and/or particular intervals, i.e., after a selected number of days, weeks, months, or meter strikes.

Where the POSTAGEMAKER program is adapted for operator supervision and/or control, the main screen preferably consists of function "buttons" which may be clicked on with the mouse 16 to activate them. At the beginning of a session, the postal agent must have a supervisor enable the program by putting a master portable processor button 18 into holder 17 and clicking on the function "Log in the Master Button." The master password is typed into the dialog window illustrated in FIG. 4B. The password here will be passed to the master security button for verification against the one stored inside of it. If the password is incorrect or the button was not the correct one for this supervisor an error will be displayed and the POSTAGEMAKER users will be prompted to retry the master login operation.

It shall be appreciated that communication between host system 10 and the coupled storage devices may be over an unsecured channel and may be subject to tampering, interception, and/or disruption. Accordingly, the preferred embodiment of the information exchange between these devices is as shown and described in the above referenced patent application entitled "SYSTEM AND METHOD FOR PROVIDING FAULT TOLERANT TRANSACTIONS OVER AN UNSECURED COMMUNICATION CHANNEL."

With login successfully accomplished, the postal agent then must log into the POSTAGEMAKER system by plugging his/her agent portable processor button 19 into holder 17 and clicking on the function "Log in the Agent Button." The agent password is typed into the dialog window illustrated in FIG. 4C. The password here will be passed to the agent security button for verification against the one stored inside of it. If the password is incorrect or the button was not the correct one for this agent an error will be displayed and the POSTAGEMAKER users will be prompted to retry the agent login operation.

Once both master and agent security buttons have been logged-in, POSTAGEMAAER is now considered to be a valid credit server. In this discussion, credit server is defined as a host system-based application which is empowered to allow portable postage dispensing devices, such as storage device 18, to become credited with prepaid postage values for subsequent control of a processor based system or otherwise conduct the management functions described herein.

If it should be necessary to create an agent security button, the function "Create an Agent Button" should be selected with mouse 16. A valid logged-in agent button is not necessary for authorization to perform this operation. Only a valid logged in master button is required. Once the "Create an Agent Button" function is selected and it has verified proper authority as has been previously asserted, the dialog window in FIG. 4D appears. The Agent Id, Name and access password must be input so they can be registered on the newly formatted agent button. An example of this information appears in FIG. 4E.

Once this dialog has been fully filled out, the "OK" button should be selected to continue the operation. If "CANCEL" is selected the dialog window appears and the function terminates leaving main control to the main screen pictured in FIG. 4A. If "OK" was selected, the dialog window in FIG. 4F appears, prompting the agent to place a blank button on the interface 17 and hit the ENTER key on keyboard 15 when ready (or use mouse 16 to select the "OK" button on the dialog).

The host processor-based system 10, executing the POSTAGEMAKER program will complete the operations necessary to format the button as an agent security device and if successful will display the dialog window pictured in FIG. 4G. Select OK to continue.

To format a new portable postage dispensing device, the agent must select the "Create a New Postage Button" function by clicking on it with mouse 16. At this point, the dialog window in FIG. 4H appears prompting the agent to put a blank postage button on the holder 17. Should the operation fail, a dialog warning of this will appear. If successful, a receipt such as shown in FIG. 4I will print out on the designated agency printer. The receipt is necessary because of the initial value bestowed on the postal button by the credit server POSTAGEMAKER. Along with the receipt, a record is kept in the host processor-based system 10 of the transaction for logging purposes.

To add postage to a portable postage dispensing device, the agent select a the fintion, "Add Postage to a Used Button" with mouse 16. Once this is done, the portable postage dispensing device, which was previously placed on the holder 17, will be read and the dialog window in FIG. 4J will appear if the button was newly formatted and has not yet been registered. If the button has been previously registered and is being refilled, a dialog window like that in FIG. 4J will appear but with supplementary information as pictured in FIG. 4K. In both cases, the button serial number is the same, but user registration data has been completed in the latter version in FIG. 4K. User registration information displayed here are: Registration No., Name of registered button owner and ZIP code of registered button owner.

In FIG. 4J, the button has a current balance of \$2.00 and expires on Aug. 23, 1995. By filling in an amount in the Transaction Balance field, the agent can refill this button, even though it lacks registration information. It should be noted however, that the E-STAMP program will not allow transactions to be made with this button before it has been registered and a valid registration number has been stored on the portable processor button.

In FIG. 4K, the already-used and registered button has a current balance of \$102.09 and its expiration date is Aug. 23, 1995. Expiration date is always set by POSTAGEMAKER as 90 days from the date of refill. This implies that revisits for refill operations must take place at least once every quarter. This is an arbitrary restriction and can be changed if desired. Any one of a number of "time-out" scenarios could be employed. For example, a preestablished time of three months from last refilling, or the time-out could occur a certain time after non-use or a certain number of meter strikes. However, setting a relatively short expiration date window, such as the above mentioned 90 days, may be desirable, for example, where a single credit register is utilized for prepayment of all shipping service providers with distribution of funds only occurring upon receipt of transaction information during the refill process.

Continuing with the refill operation, if the agent is requested to put \$100 worth of postal value on the portable postage dispensing device by the user, this amount is entered in the "Transaction Balance" field with keyboard 15 as shown in FIG. 4L. Selecting the "Accept" function at the bottom of the dialog window will give another dialog window for validation purposes, such as that in FIG. 4M. Clicking "OK" makes this dialog window disappear and control returns to dialog window 4L with the "Refill Balance" field filled out with the \$100+previous balance of \$2 giving total \$102. Clicking "Cancel" in Dialog window 4L simply returns to dialog window 4L without updating the refill balance field. Selecting "ReEnter" at the bottom of dialog window 4L allows the "Transaction Balance" field to be redone in the case a mistake was made. The "Cancel" function at the bottom of dialog window 4L simply cancels the fintion and returns control to the main window pictured in FIG. 4A.

The actual committing of the credit operation happens when "OK" is selected at the bottom of dialog window 4L. The meter is credited and dialog window 4N appears to tell the agent the operation was successful. At this point, if successful, a receipt such as shown in FIG. 4O will print out on the designated agency printer. The receipt is desired to maintain an audit trail of the new postal value bestowed on the portable device by the credit server POSTAGEMAKER. Along with the receipt, a record is kept in the host processor-based system 10 of the transaction for logging purposes.

Normally, the portable processor is completely secure from tampering but certain conditions might trigger the

portable processor to disable itself to protect its internal postal value integrity. Should this ever happen, the function "Attempt to Repair a Damaged Button" can be used by an agent to notify the portable processor that the matter has been investigated and no fraudulent actions appear to have been committed. This allows the button to start to work again accepting commands from a host processor-based system 10 for both crediting and debiting operations.

The preferred embodiment of the credit refill operation of the present invention has been described with reference to a single shipping service provider accepting payment for and bestowing a corresponding amount of postage credit. This preferred embodiment allows for a single trusted shipping service provider, such as the United States Postal Service, which has already established infrastructure deployed to service the populace in general to manage the payment by users for shipping services of a number of shipping service providers. Accordingly, at time of refill, this trusted shipping service provider may analyze transaction information stored on a storage device 18 to determine amounts of the debited postage credit associated with particular shipping service providers for example, the transaction information may include a record incremented in an amount corresponding to a particular one of the shipping service providers conducting a transaction before a printer is enabled to print information authorizing the particular one of the shipping service providers to conduct a transaction. Thereafter, this trusted shipping service provider may forward monies, previously received in payment of a credit refill transaction, to the appropriate shipping service providers in payment of their services.

Additionally or alternatively, the postage indicia or other authorization information printed according to the present invention and included with a shipped item may be utilized by the shipping service provider transporting the item to demand payment from this trusted shipping service provider. Such a system allows for more timely payment of the shipping service provider actually providing the service.

Alternatively, ones of the shipping service providers, or their authorized agents, may operate credit servers. Accordingly, a particular shipping service provider may refill a credit amount, such as a separate register associated with this shipping service provider in the storage device, upon receipt of payment from the user. Such an alternative embodiment allows for such ones of the service providers to receive prepayment of the fees and, thus, eliminate any delay in collecting for services rendered. Of course, such an embodiment requires these shipping service providers to deploy the infrastructure necessary for their direct involvement in the refilling of credit in the storage device. However, with the proliferation of the Internet and other user friendly electronic information exchange mediums, such infrastructure may be little more than a host system, i.e., a "web server," having the appropriate security measures implemented therewith.

Additionally, even where a trusted shipping service provider, or other operator of a credit server authorized to refill credits associated with multiple ones of the shipping service providers, is relied upon to increment the credit stored in the device the above described use of separate credit registers for ones of the shipping service providers may be utilized to increase the shipping service provider's separate register and to forward the prepaid monies to this shipping service provider.

Accordingly, in an alternative embodiment, the POSTAGEMAKER screen illustrated in FIG. 4A may be altered

to include an additional function button(s) in order to identify a particular credit register to refill or otherwise increment. For example, the function button labeled "Add Postage to a Used Button" may be associated with a credit register utilized in generating postage indicia accepted for use by the United States Postal Service, and possibly other indicia or authorization information accepted by other shipping service providers, and a second function button may be disposed thereunder. This second function button, possibly labeled "Add Expedited Shipping Credit to a Button," may be associated with an overnight delivery service such as Federal Express, Emery, or Purolator Courier. Of course, rather than an additional function button added to the screen of FIG. 4A, selection of the "Add Postage to a Used Button" function button may invoke a sub-menu which allows the agent to select a particular credit register to increment.

Although discussed with reference to a trusted shipping service provider, it shall be appreciated that the agent authorized to grant credit according to the present invention may not be a shipping service provider at all. For example, other businesses or entities having a preexisting infrastructure compatible with the deployment of the present invention, such as banks, grocery stores, or the like, may collect prepayments and dispense refill credits.

Regardless of the actual time of payment, it shall be appreciated that the shipping service provider is relieved of many of the expenses and risks involved with collecting shipping fees from the many individuals utilizing their services. Accordingly, the trusted shipping service provider may extract a fee, such as a percentage of the shipping fees, in payment for provision of this valuable service to other shipping service providers.

It shall be appreciated that although a preferred embodiment of the POSTAGEMAKER program has been described above with reference to the use of supervisor and agent buttons to enable particular functionality of the POSTAGEMAKER program. It shall be appreciated this is but one embodiment of a system for providing credit to and/or retrieving information from the user's portable memory, or other storage device, of the present invention. Accordingly, one of skill in the art will readily appreciate that the crediting, determination of obligations to pay, auditing functions, and the like of the present invention may be provided by a number of means including a system not relying on the aforementioned buttons.

E-STAMP FUNCTIONALITY DESCRIPTION

Once the required amount of postage has been transferred to the portable processor button 182, the user may then physically carry the button back to the user's business location and couple the portable processor button 182 to a host processor-based system 10 through button holder 172. Upon invocation of the E-STAMP program by the customer, the customers host processor-based system 10 can access the postal amount stored in portable processor button 182 and download portions of the stored postage to the E-STAMP program to be used for printing postage indicia or other authorization information on items to be shipped.

Referring next to FIG. 7, there is illustrated a flow diagram of the process employed within host processor-based system 10 configured for allowing a user to print a postage indicia or other authorization information. As previously discussed, the E-STAMP program may be a stand-alone program, or it may be associated and coupled with another process such as a word processor program. Therefore, the E-STAMP program may be started directly

(step 702) or via step 701. Thereafter, at step 703, the E-STAMP program shows display 80, illustrated and described with respect to FIG. 8, to the user.

Next, in step 704, as shown in FIG. 7, the E-STAMP program verifies the existence of portable processor button 182 coupled to host processor-based system 10. If portable processor button 182 has not been inserted within its holder 172, at step 705, a message is flashed to the user to insert portable processor 182. If the wrong portable processor button, or a portable processor button not programmed for use with the E-STAMP program, has been inserted and coupled to system 10, a warning is flashed to the user to insert an authorized, or valid, portable processor button 182 as illustrated in box 706. The process of portable processor verification represented by box 704 includes several steps as follows: Step 1—Successful communication with portable processor within its strict communication protocol and command structure already demonstrates likelihood that at least the type of button is correct (i.e., it is more than just a Dallas Semiconductor button, it is a button running the proprietary code particular to the postage application outlined herein). Step 2—Serial number of portable processor is verified against encrypted registration information in the PC.

If a valid portable processor button is coupled to system 10, at step 707, other information stored in the secure environment of the portable processor is demanded via the common command structure used for host-to-button communications. The process of portable processor connection represented by box 707 includes several steps as follows: Step 1—E-STAMP passes user password entered to portable processor and verification takes place within the secure environment of the portable processor button to guarantee maximum secrecy of the password. Password is never stored in host processor-based system 10. Step 2—if the portable processor reports a result from Step 1 as a password match, E-STAMP will then be able to access the command facilities of the portable processor to ultimately print postage indicia thereby deducting value from the internal data representation of credit within the portable processor. Step 3—Portable processor verifies its own expiration date based on an internal realtime clock. Host processor-based system 10 never has opportunity to interfere in this decision. Step 4—if the result of the expiration date check of Step 3 is that the portable processor is still valid, the user registration information stored in the host processor-based system 10 is passed to the portable processor for validation. Step 5—if the check of Step 4 is valid, the current meter balance is displayed in the center-button part of the E-STAMP program screen block 806, just to the left of the traffic light icon which will also display “green” to indicate that a valid portable processor button is available for use in printing postage indicia. If any of the above checks are invalid, the traffic light displays “red” to indicate that a valid postage dispensing device was not detected.

Next, at step 708, return address box 803 is completed automatically or manually. The address within 803 may be automatically entered from the adjoining word processor or database program, the address may be selected from a drop-down box (not shown), or the address may be manually input, for example. Any entered address may be saved within the E-STAMP program. Additionally, if a return address is not desired, it may be omitted.

Thereafter, in step 709, the contents of address box 805 are entered in a manner similar to the contents of return address 803.

Next, at step 710, the user may select the print format by the use of the “Print Setup” standard dialog box selected in

the “File” Menu as pictured in FIG. 8A. As illustrated, the postage indicia may be printed on a label through printer/label maker 19, or a choice may be made to print the postage indicia on an envelope inserted within printer 19, which may be chosen to be a standard size or a nonstandard size as selected by the user. Note that if the postage indicia is to be printed on a label, it may be desired that the return address within 803 and the address within box 805 not be printed.

Alternatively, the postage indicia and the addresses within boxes 803 and 805 may all be printed on a flyer, a pamphlet, a postcard or a sheet of paper. Whenever the indicia is printed on a letter, along with the addresses in boxes 803 and 805, that letter may be folded so that the indicia will show through an opening or window 901, in the top right hand corner of a specially designed envelope 900 illustrated in FIG. 9 and as shown in co-pending Design Patent Applications

Serial No. 29/022,913, filed May 16, 1994, now U.S. Pat. No. D395,333 and Serial No. 29/039,328, filed May 24, 1995, now U.S. Pat. No. D380,007 both incorporated by reference herein.

Envelope 900 may be a standard or non-standard size with any number of windows as designed by the user. Typically, envelope 900 will have a first window 901 in the top right hand corner for the printed postage indicia to show through. Envelope 900 may also have other windows for the addressee's name and address (903) and for a return address (902) to show through. Envelope 900 may have glassine paper, or other transparent covering material, covering the described windows such that the postage indicia and other imprinted information is protected from inadvertent detachment and adverse conditions (such as inclement weather).

Additionally, a user may select a print format such as a waybill, manifest, or bill of lading in the alternative to or in addition to the above print formats. Accordingly, where the item to be shipped or mailed is anticipated to be shipped by a carrier requiring such documentation, the E-STAMP program may automatically generate and/or complete such documentation. Of course, such alternative formats may require additional information from the user, or computer process such as the aforementioned word processing program. Accordingly, selection of ones of the available formats may provide for the acceptance of additional information into the E-STAMP program, such as by opening an additional dialogue box or communicating with the additional computer process.

It shall be appreciated that selection of print format information may be omitted, skipped, or overridden by other selections by the user and/or E-STAMP program. For example, selection of a particular shipping service provider as described herein below may override a portion of the print format selections where the selected shipping service provider requires a particular non-selected format or requires a particular document or form to be completed. Accordingly, in an alternative preferred embodiment of the invention, selection of a print format may be at a point in the process sometime after selection of a particular shipping service provider in order to automatically provide default printing format selections according to the shipping service provider selected. Provision may be made for the user overriding these default selections, if desired.

In step 711, the user enters the weight of the package or letter associated with the postage indicia or other authorization information. This weight may be entered manually, or automatically, such as through the use of scale 103 coupled to host processor-based system 10 in a manner well known in the art.

In step 712, the user selects the class and/or urgency of the item from the choices shown in box 802 and 807. It shall be appreciated that ones of the selections of class and urgency may substantially overlap and, therefore, selection of such an option from one of boxes 802 or 807 may also make a corresponding selection in the other one of boxes 802 or 807.

Additionally, class and urgency information may be different for each of the shipping service providers and, accordingly, selection of a particular classes or urgency criteria may be based at least in part on the particular shipping service provider(s) for which the user wishes the E-STAMP program to calculate the necessary postage. For example, different class and/or urgency information may be selected for each shipping service provider for which shipping fee calculations are to be made. Alternatively, the class and urgency information may be presented for selection generically, as shown in FIG. 8, and the E-STAMP program operate to determine the corresponding fees for each of the particular shipping service providers automatically.

Thereafter, in step 713, the user may select the location of routing information for the recipient address. Such information will be automatically extracted from the address, and may be formatted in a special symbology preferred by a particular shipping service provider, such as being formatted in the POSTNET symbology for ZIP+4 information, as provided in Postal Service Publication 67 and incorporated herein by reference.

Typically the postal indicia or other authorization information may include any combination of the following information: the date, the postage dispensing device serial number, the sender's ZIP code, the addressee's ZIP code, the expiration date of the postage dispensing device, the cumulative values of the strike and dollar counters, the E-STAMP registration number or other information identifying the particular user/system generating the indicia, and the post office or other credit server identification number. The postage indicia or other authorization information preferably contains this information, digitally signed by the portable postage dispensing device and presented to the outside world thusly, thereby providing means by which the indicia may be read and automatically by the shipping service provider's, and their authorized agent's, scanning equipment which will be charged with decoding the indicia bar code and verification of the integrity of the indicia. The postage indicia physical form may encode the digitally signed information within an insignia or design, or it may appear as a background for the postage amount printed in a visually recognized form.

Furthermore, the use of the POSTAGEMAKER program in conjunction with a database program will allow the authorized postage by post office location (or ZIP code), post office agent, portable postage dispenser serial number, etc. This information can be easily compiled to determine post office sales, market forecasts, etc. Likewise, this information may be utilized by a particular shipping service provider in collecting fees from an operator of a credit server for service provided in shipping the associated item.

At step 714, the user may select a particular zone associated with the mail piece or other item. Such information may be utilized in the determination of the proper amount of postage or other fees associated with the shipping of the item. Additionally, this zone information may be utilized in determining the availability of a particular delivery service, such as overnight, certified, or the like, available from particular ones of the shipping service providers.

It shall be appreciated that such zone information may be different for each of the shipping service providers and, accordingly, selection of a particular zone or zones may be based at least in part on the particular shipping service provider(s) for which the user wishes the E-STAMP program to calculate the necessary postage. For example, different zone information may be selected for each shipping service provider for which shipping fee calculations are to be made. Alternatively, the zone information may be presented for selection generically and the E-STAMP program operate to determine zones for each of the particular shipping service providers automatically.

The E-STAMP program will automatically incorporate the aforementioned entered parameters—weight, class, zone—in order to correctly calculate the correct postage or credit transaction authorization to print in conjunction with the postage indicia and to deduct from the postage amount stored within portable processor button 182 or record in the transaction registers of portable processor button 182.

15 In order to present the user with information from which to make an informed choice as to a particular shipping service provider by which to ship the piece of mail or other item, the E-STAMP program may calculate the fees associated with a plurality of the available shipping service providers. Accordingly, the user may select shipping service providers of interest (not shown) in order to allow the E-STAMP program to determine the fees for only those shipping service providers. Thereafter, the E-STAMP program may calculate and display fees associated with shipping the item via the selected shipping service providers according to the desired shipping and/or delivery parameters, i.e., class, urgency, etc. Where a selected shipping service provider does not provide a desired shipping and/or delivery parameter, the E-STAMP program may indicate such and provide the fees for a service offered by that particular shipping service provider most near that desired by the user.

30 35 However, in the preferred embodiment, the E-STAMP program automatically calculates the fees for each shipping service provider offering service commensurate with the desired shipping and/or delivery parameters. Additionally, the E-STAMP program may indicate other ones of the shipping service providers which do not provide a desired shipping and/or delivery parameter and provide the fees for a service offered by that particular shipping service provider most near that desired by the user, as well as indicate how their service differs from that desired.

40 45 Lastly in step 715, the user confirms his/her choice to print the postal indicia or not, thereby with the understanding that that amount of postage will be deducted from the balance in the portable postage dispenser 182. If YES is chosen, the user selects a particular shipping service provider, such as by checking a box associated therewith (shown in box 808), and control passes to step 716 for printing the postage indicia or other authorization information. At step 716, the E-STAMP program utilizes the input/output ports of host processor-based system 10 to send to printer/label maker 19, the correct data pertaining to the indicia to be printed on an envelope, letter, card or label.

50 55 60 The amount of postage printed on the indicia is automatically deducted from the amount stored within portable processor button 182 by the button itself on command from the host processor-based system 10 in step 716. Other internal information is automatically updated, including the usage record for this particular portable processor, which is kept internally, but accessible to the outside host via autho-

rized commands. Such usage records include, but are not limited to, addressee, postage amount, date, and the original denomination.

Note that during the selection of the various parameters within display 80, the E-STAMP program may be implemented to update the postage amount displayed within meter display 806, 804 as the ongoing communications dialog between the portable processor and host processor-based system 10 is essentially a real-time basis.

The date that the mail is stamped is automatically adjusted every day by a real-time clock which exists in the safe confines of the portable processor and therefore cannot be tampered with by external influence. This will help prevent pre-dating or post-dating of mail. The date and if desired, time, shall also be encrypted in the postal indicia for external verification.

The "Print Preview" option selected from the file menu in FIG. 8A is provided to not only get an idea of how the finished envelope (or label) will look but to add personalized items such as a greeting or graphical bitmap which might represent a company logo for instance.

The aforementioned steps may be repeated for a subsequent piece of mail, or the user may decouple the portable process button 182 from the system 10.

Using the E-STAMP system and method, users like lawyers, accountants, advertising agencies, etc., who bill their clients for postage will be able to keep track of postage expenses on a per-client basis.

POSTAGE REFILLING CONTROL

In the preferred embodiment, storage device 18 includes secure non-volatile (battery-backed) memory and a CPU (central processing unit) capable of executing instructions. These items are enclosed in the confines of a hermetically sealed metal can. While the internal operating code which gives the portable processor its useful attributes is preferably kept in ROM (read-only memory), the extremely sensitive data representations of monetary value, strike counters, usage logs, refilling logs and encryption keys used to encrypt the information passed to the host processor-based system 10 which executes E-STAMP and is then conveyed to a postage indicia or authorization information for use in mailing a parcel.

As discussed in further detail below, there are three different types or applications for the storage device 18 which relate to different levels of authority and use: master buttons (Authority Level 2) which are provided to a limited number of supervising postal authority personnel; agent buttons (Authority Level 1) which are provided to authorized postal agents who perform refill operations on used portable postage dispensing buttons and initialization operations on new portable postage dispensing buttons; and postage buttons (Authority Level 3) which allow the postal customer (user) to print an authorized amount of postage indicia using a separate host processor-based system controlled by the user. In actuality, the first two types of buttons are known as security devices which grant authority to serve credit and maintenance to the third type of button which is a postage dispensing device usable by postal clients.

In a preferred embodiment, at the postal authority (or authorized refill center), both a valid master and a valid agent button must be coupled to the Postal Authority/Refill Station (POSTAGEMAKER) version of system 10 before a refill or initialization operation of a postage button can take place. Of course, where security with respect to providing refill credit is not an issue, or where other means or methods

for providing such security is provided, the use of the aforementioned master and agent buttons may be omitted, if desired.

The master, agent and postage buttons are all validated by the Postal Authority/Refill Station software during refill operations. Each postage button (Level 3) is validated by the customer's E-STAMP software prior to the commencement of any indicia printing operations. The sequences for validating the master, agent and postage buttons using the Postal Authority/Refill Station software are depicted in FIGS. 10A-10F.

The Postal Authority validation procedure for a button coupled to system 10 begins at step 1000 (FIG. 10A), with the initiation of the POSTAGEMAKER refill station software. For discussion purposes, assume only one storage device 18 has been coupled to system 10 at this point. At step 1001, the software reads the communication bus to see if any valid devices exist on it. If no, it just continues to look in a "loop." If yes, the POSTAGEMAKER software running in system 10 sends a command to storage device 18, as in step 1002, to demand status information for the button. The button, which is reset from a "sleep" or dormant state when it receives the command, can verify its contents to be correct and that it is the type of button (POSTAGE or SECURITY DEVICE) that the host system 10 expects to work with. If a valid response does not come back before a time-out in step 1003, it is assumed that the button on the communication bus is not valid and an error message would be displayed (Step 1004). If the response is OK, it is implied that there is a good chance this is a properly programmed button because of its validated response to the POSTAGEMAKER specific command issued to it.

At this point, depending on the type of button expected, the status information is checked to see if the button is of that type in steps 1005, 1006 and 1007. Status is checked to see if the button is master at step 1005, if not status is checked to see if the button is agent at step 1006, if not the status is checked to see if the button is postage at step 1007, and if not an error is generated at step 1004. Based on the decision of what type it is, a connect operation for that type of button is attempted in step 1008, 1014 or 1019 FIG. 10B. If master or agent security device, a security device type of connect is issued to the button (steps 1015 and 1009) and a correct response must be received by the host system 10 before proceeding generating an error at step 1013 if no valid connection signal. If a correct response is received by the host system 10 at step 1015 or 1009, in steps 1010 or 1016 a master or agent password is demanded of the user depending on which type of button is being serviced. Step 1011 validates this password by passing the password to the button so that it can verify it in its own secure environment generating an error at step 1017 if button does not validate the password. The password is never stored in host system 10 for security reasons. A positive validation of password from the button grants (Step 1012) the host authority level of 1 for master and agent simultaneously on the bus and authority level 2 for master only on the bus.

Assuming that the button was a postage type and the connection which was made in step 1019 is made and verified in step 1020 generating an error at step 1013 if no valid connection signal, the POSTAGEMAKER software does not require the validated password of the postage button to continue. However, it will check that the proper authority level two has been previously granted by the presence of both a validated agent and master button on the bus at the same time in step 1021. If the proper authority level has not been attained, no operations may be performed

on the postage button. If that authority exists, control can proceed to step 1022 or step 1018 in the case of a customer demand for new button initialization, old button credit refill or old, damaged button repair operations.

The credit refill operation to a used button is depicted in FIG. 10C, step 1030. The credit command must first verify, in step 1031, its authority level is correct and set at one by the presence of valid and password unlocked master and agent buttons or further postage refill processing is prevented (step 1031). Provided this is the case, in step 1032, the amount of postage to be credited to the button is input by the authorized agent into a form dialog window and validated for correctness by the POSTAGEMAKER software. In step 1033, the credit command, amount and a conglomeration of encrypted data known as a security packet are sent to the postage button which must decode and validate and if all appears to be valid, perform the credit operation before the time-out signified in step 1034 which will occur if the response does not come back from the button to the host system 10 in a specified period of time generating an error at step 1035 if command response not okay. It is the security packet that allows the button to continue with the credit operation. This data structure has a predefined layout and contents which are encrypted using a certain key and method of encryption. This security packet contains data items, such as identification numbers of master and agent issuing the credit to the button, host date/time (which must match not exactly but closely with internal button date/time), workstation number for host system 10 running the POSTAGEMAKER software and postal authority location identification. Other data items could be used for checking purposes. This security packet is different in form and function from the one described here below in FIG. 6.

FIG. 5A, which begins with step 500, depicts the credit process. Box 501 reviews the material received from the host to determine validity preventing further internal credit processing if the material received from the host is not valid (step 501), otherwise proceeding to step 502. Boxes 502-504 validate the security packet, generating an error at step 504 if the security packet is not determined to be valid at step 503, otherwise proceeding to step 505. Box 505 validates the proper button is on the bus preventing further internal credit processing if the proper button is not on the bus (step 505), otherwise proceeding to step 506. Boxes 506-507 validate the valid credit amount and box 508 updates the internal memory, generating an error at step 507 if the credit amount is not determined to be valid at step 506, otherwise proceeding to step 508. Box 509 ends the routine.

FIG. 5B shows the button debit process which begins with box 600. For boxes 601-605 a transaction buffer request from the host is checked. At step 601 a determination is made as to whether a transaction buffer from the host has been received, generating an error at step 602 if not, otherwise proceeding to validate the transaction buffer at step 603. At step 604 a determination is made as to validity, generating an error at step 605 if not valid, otherwise proceeding to step 606. At step 606 a determination is made as to a valid postage button being on the bus, preventing further internal button debit processing if not (step 606), otherwise proceeding to step 607. In boxes 607-608 the validity of debit amounts on the bus are checked. Box 609 updates the internal registers of the button and box 610 creates the security packet for transmission to the host. Box 611 ends the routine.

Referring to FIG. 6 there is illustrated a preferred embodiment of the transformation of user information by the portable processor button into a data entity known as a

security packet which is then handed off to the E-STAMP application, running in a host processor-based system and transformed into an indicia for inclusion on an envelope.

The process begins in Box 650 in the software, running in the host processor-based system, when a user fills out an envelope and demands of the program that it be printed with an indicia of X amount of postage determined by weight, zone, etc., as shown in boxes 654, 655 and 656. Much of the information to be printed on the envelope will be transferred to the internal software printing functions which interact through interfaces with the WINDOWS operating system by methods well known in the art.

In addition and before this hand-off of information is accomplished, in step 651, the program sends a command to the storage device 18 (FIG. 1A) to create a data entity or form known as a security packet. Included with the command is the data that will produce the envelope which may include, but is not limited to, date and time, current balance of metering device, strike counter of total transactions, serial number of meter, transaction id, debit amount, addressee ZIP code, addressee name and class of postage. There is also a complement of information about the user: registration id, name, company and address. Included for secure access to the button is the personal identification number (PIN) which is the password used to unlock the button and is validated within the secure environment of the button.

Once the PIN is validated, the storage device 18 accepts all of this data from the host process-based system and in step 652, using hash algorithms, internal math coprocessor hardware, digital signature/encryption software algorithms, the portable processor produces the security packet, preferably in the form of a digital signature, using information from boxes 657 and 658. The encryption algorithms can advantageously be RSA public/private key but might be changed at any time related to security issues. Indeed, this security packet, produced in the secret and secure environment of the portable processor becomes indecipherable to the outside world including the host processor-based system. The only other entity which should have knowledge of the keys to be able to decrypt this packet or similarly generate a corresponding data packet for comparison therewith would be the postal authority or other shipping service provider in their designated package sorting and scanning centers.

In step 653, the security packet is transmitted back as a response to the host processor-based system. This indecipherable security packet is then handled blindly by the program to the point where it is passed on to a software function within the program which will encode security packet 653 into a bar code image. The program then takes this bar code image, includes certain other unencrypted information for the visual identification of the postage indicia and/or for use in generating a corresponding indicia or security packet for comparison and passes this through the programmer's interface to the WINDOWS system to the standard printing facilities of that environment in a fashion well known in the art. Also included in this step is the passing of the return and designation addresses and all other parts of the envelope which must be printed and can vary based on user choices before the printing step.

These WINDOWS printer drivers, supplied with the WINDOWS system and apart from the E-Stamp system, can change for any given printer installed, isolating an application program such as E-Stamp from the innate differences of these printers in a fashion known as "device independence" also well known in the art. The driver, in steps 655 and 656, does its work of printing on the envelope, 654, which has already been inserted in the printer.

In step 1036 (FIG. 10C), a receipt is printed out for the customer and the results are written in a transaction log stored on host system 10 or on another system 10 connected to the system 10 running E-STAMP or POSTAGEMAKER through a local area network. Box 1037 ends the routine. Box 1037 ends the routine.

The postage button initialization operation for new (never used buttons) is shown in FIG. 10D beginning at step 1040. The initialization command must first verify, in step 1041, its authority level is correct and set at two by the presence of valid and password-unlocked master and agent buttons, otherwise further button initialization processing is prevented (step 1014). Provided this is the case, in step 1042, the initialization function must locate a "blank" button on the bus to proceed to step 1043, otherwise further button initialization processing is prevented (step 1041). A blank button is defined as one which has pre-loaded operating instructions in its internal read-only-memory which are specific to the application outlined in this patent. The operating instructions must also be of the type of button being initialized. That is, those instructions for a postage button are somewhat different than those for a security device button necessitated by the differences in their operating behaviors and functions.

When a button, postage or security device type, receives an initialization command from the host system 10, it must first have instructions in it to tell it what initialization means and what should be performed to accomplish this. Thus, it is the button that initializes itself after receiving a command from a host system 10, not the host system 10 directly writing in memory locations within the button. The architecture of the button is such that outside influence can not directly change its operating instructions or memory. The host system for the button can only issue commands as defined in a narrow set of criteria to the button to make it perform a task such as initialization, credit or debit operations and repair of damaged memory.

In step 1043, the actual initialize command is issued from host system 10 to button and response of completed or not must return before the time-out period as shown in step 1044, generating an error at step 1045 if command response not okay, otherwise proceeding to step 1046. Box 1047 ends the routine.

In step 1046, the positive or negative outcome are displayed on host system 10 display screen to the agent. The transaction is logged and a customer receipt is printed out by POSTAGEMAKER before ending the initialization function.

The internal layout of data in RAM for a postage button is depicted in FIG. 12, as box 1201.

The postage button repair operation is shown in FIG. 10E beginning at step 1050. The repair command must first verify, in step 1051, its authority level is correct and set at one by the presence of valid and password-unlocked master and agent buttons, otherwise further button repair processing is prevented (step 1051). Provided this is the case, in step 1052, the repair function must locate a damaged, but still valid postage button on the bus too proceed to step 1053, otherwise further button repair processing is preventing (step 1051). A damaged button is defined as one which has some internal memory location(s) which have been lost or changed because of internal program errors in the postage button itself. Another type of "damage" which may need repair might result if a postage button had ever been lifted from its holder while a host system 10 was issuing commands to it and the button was in the middle of executing

some of those commands and the user lifted the button off of its holder. This would then immediately stop execution of the internal operating code of the button, perhaps leaving the results of the intended operation indeterminate.

5 A more permanent kind of damage might be the loss of internal RAM or ROM which would probably be catastrophic enough that total replacement of the button would be in order. Such replacement would necessarily dictate marking the button serial number as invalid in the user registration database and entering the new button serial number for that user once it has been replaced and registered.

In step 1053, the actual repair command is issued from host system 10 to the postage button and response of completed or not must return before time-out period as shown in step 1054, generating an error at step 1055 if command response not okay, otherwise proceeding to step 1056. The button must act on this command by checking its internal structures insofar as it can to see if all is as it should be. If nothing seems out of order, there is no repair work to be done. Otherwise, anything that can be reinitialized will be, and in any case, the results of the operation are reported back to host system 10 and displayed in step 1057. Box 1057 ends the routine.

25 The agent button initialization operation is shown in FIG. 10F beginning at step 1060. The initialization command must first verify, in step 1061, its authority level is correct and set at two by the presence of a valid and password-unlocked master button, otherwise further agent initialization processing is prevented (step 1061). Provided this is the case, in step 1062, the agent initialization function must locate a "blank" button on the bus to proceed to step 1063, otherwise further agent initialization processing is prevented (step 1061). A blank button is defined as one which has pre-loaded operating instructions in its internal read only memory which are specific to the application outlined in this patent.

As explained above, the operating instructions must also be of the type of button being initialized. That is, those instructions for a postage button are somewhat different than those for a security device button necessitated by the gross differences in their operating behaviors and functions. When a button, postage or security device type, receives an initialization command from the host system 10, it must first have instructions in it to tell it what initialization means and what should be performed to accomplish this. Thus, as discussed above, it is the button that initializes itself after receiving a command from host system 10, not the host system 10 directly writing in memory locations within the button. The architecture of the button is such that outside influences can not directly change its operating instructions or memory. The host system for the button can only issue commands as defined in a narrow set of criteria to the button to make it perform a task such as initialization, credit or debit operations and repair of damaged memory.

40 In step 1063, the actual initialize command is issued from host system 10 to button and response of completed or not must return before time-out period as shown in step 1064, generating an error at step 1065 if command response not okay, otherwise proceeding to step 1066.

45 In step 1066, the positive or negative outcome is displayed on host system 10 display screen to the agent. The newly formatted agent button may now be removed from its holder and distributed to its new agent owner. Box 1067 ends the routine. The internal layout of data in RAM for an agent (or master) button is depicted in FIG. 13.

Referring back to FIG. 10A, and for the sake of further discussion and understanding of this POSTAGEMAKER button validation process, if a real-world situation presents itself where all three types of buttons: Agent, master and postage happen to be on the bus at the same time, the proper button is located by its response after a status query by the host system 10 running POSTAGEMAKER. Furthermore, the POSTAGEMAKER software has been designed in such a fashion that that button's physical position on the bus is not of importance. Once a button has been located and connected, its position on the bus could physically change with no effect to POSTAGEMAKER. This flexibility lends a certain forgiveness to order of log on of master or agent and distinguishing between the two and also between postage buttons and the master or agent.

Preferred Embodiment—Portable Processor Layout

FIG. 11 depicts a functional layout of the Dallas Semiconductor "smart" button 182 which is the preferred embodiment of the portable postage dispensing device. The smart button is so called because of its button-like appearance and small size and built-in memory 1104, 1107 and processor (CPU) 1101. It is a microprocessor contained in a hermetically sealed metal can with several other "hybrid" components which make it even more useful in a secure environment.

Central processing unit (CPU) 1101 is a more efficient copy of the original 8051 microprocessor of Intel Corporation. Like most microprocessors, it executes instructions in sequence out of a memory, in this case, 8 Kbytes of read only memory (ROM) 1107. This sequence of instructions is sometimes known as a program or as operating code. Any process which has been programmed into a CPU will also require data to represent various control aspects of its task. Most of the data for the postage dispensing devices is kept in the 3 Kbytes of random access memory (RAM) which are non-volatile. Semiconductor RAM loses its contents once power is removed from it, thus its volatile nature. Where this unique device draws its power from will be discussed here below. However, in order to not lose the contents of the RAM between uses of the button, a small battery 1103 with a life of 10 years is present.

Included is a set of registers 1102 for various uses as discussed herein. In addition to the normal registers which are part of the 8051-like architecture of the smart button, there are several other general purpose registers which provide such features as timed access to particularly sensitive RAM locations (such as the location of a cryptographic key). Another register is used for sequence checking of the operating code of the smart button. The use of this feature is in making sure that the code is executing in the proper sequence and has not somehow jumped out of its normal path of execution because of an anomaly of programming or due to tampering. Another register is a real-time clock which gives the button self-sufficiency in knowing what the current time is relative to its expiration date and also as an unimpeachable (in the sense that it can not easily be externally tampered with) source of date stamping for the postage indicia.

Several other special features have been added just for use according to the present invention. There is a 768-bit multiplier circuit which can multiply two 768-bit operands in extremely high speed. The application of this is for the cryptographic chores which are necessary in secure communications between host system 10 and button 182. Another feature is random number generator 1108, also for cryptographic algorithm use. Another feature is a cyclic redundancy check (CRC) generator 1106 for use in communications to verify integrity of data received from the host system 10.

One feature, not specific to this system, but necessary all the same is a universal asynchronous receiver transmitter (UART) circuit 1109 for communication with the outside world. This UART makes contact with host systems via the metal case surrounding the smart button. This metal case must come in contact with an interface circuit bus which is ultimately connected to a host system 10 via means well known in the art. The UART takes care of the task of sending and receiving bytes of information and informing the CPU of its status.

Another function of this circuit is to take "Parasitic" power from the host interface. This parasitic power is the voltage and current actually used to give the CPU and other circuitry the power it needs to function at high speed without the need to draw on the internal battery for anything but keeping the contents of the RAM and the realtime clock register live. Bus 1110 connects all of the internal devices together so that they can function as a unit. The manner in which the UART and parasitic power are arranged to interface with the outside world, through the metal can of the processor is unique and leads to increased usability for the entire device.

Memory Layouts

FIG. 12 is the layout given to the 3K RAM in the preferred embodiment for a postage button. All registration identity, current balance and history logging data are stored in box 1201. Of course, where multiple credit registers are utilized as described above, the RAM layout may include multiple ones of particular entries (not shown), each associated with a particular credit register. Likewise, multiple ones of the non-volatile RAM (not shown) may be provided in the storage device.

FIG. 13 is the layout given to the 3K RAM in the preferred embodiment for a security device button such as an agent or master. As can be seen by comparison with FIG. 12, the security device is a similar, but limited subset of the postage memory definitions. There is just enough data in box 1301 to identify its owner and to provide logging services in order to better know how various buttons are being used.

Referring now to FIG. 14, the process begins at step 1400 where a button is initially created and given a small token value. The button creation is marked by its entry into an "Initial Fill Button Inventory Database" simultaneously with its inclusion in a shrink-wrapped package of software to be shipped to users of the verification system. Once a given software package, button included, has been obtained by a potential user, he/she must fill out an electronic user registration form whose present embodiment is that of a "WINDOWS" program separate from the main program but included with it on the system installation disks. The registration program must be executed as part of the installation of the system before it can be used to issue postage. The process of the user filling out the form, sending it and the still-unregistered button back for registration to be scanned into the user registration database for registration is represented in step 1401 and step 1402. Also included in these steps is the removal of the button from the Initial Fill Button Inventory Database now that it is a valid registered postage dispensing device. In effect, the button, with its unique serial number, was moved from one inventory to another. Furthermore, as will be seen in future steps, the user registration database will be used for far more than just normal user registration of a software product.

In step 1403, the user has received back his/her button, now fully registered and therefore legal to use in postage transactions. The user inserts the storage device in its interface receptacle and invokes the system control program

on the PC. Once a letter has been produced, with a certain amount of postage, this amount of postage is deducted from the amount stored in the portable processor (memory) by way of commands from E-STAMP. The postal indicia with its encrypted form of user information, postage amount, date, strike counter and other information is printed on a label for sticking to an envelope or actually printed on an envelope. At this point, the mail object is entered into the mail system of the shipping service provider in step 1401A.

In step 1404B, the article of mail has been gathered and sent to a central processing facility. In step 1405, the article of mail is scanned. The scan process first decodes the postal indicia or other authorization information, preferably using bar code scanning technology coupled with industrial automation, toward the goal of validation of the pre-paid rights or obligation to pay to send the article of mail. The system, in step 1406, uses a series of criteria and checks to accomplish this. Examples of criteria include, (but are not limited to): 1) Just the fact that the indicia, which was digitally signed in the secure environment of the storage device, can be decrypted gives a basic comfort level of validation; 2) Check against the central user database for validation of expiration date, expected balance of meter as of now and special flags for lost or stolen portable postage dispensers giving the capability to invalidate them much in the same way lost or stolen credit cards can be invalidated because of their validation against a central database.

If the article of mail passes, in step 1407A, the mail is routed to its normal destination. However, if the article of mail does not pass one of the tests, it is rejected to step 1407B where an entry is written in an anomaly database 1407C of items to be investigated.

The refill, step 1408, happens asynchronously to the rest of the steps, but is included, nevertheless, because of its contribution to the overall process loop. This is performed when a user has used most of the pre-paid credit on his/her storage device and must return the storage device to an authorized refill station, such as the United States Postal Service. The preferred embodiments may include simply a host processor-based system used by one authorized agent to serve walk-up clients or an automated process whereby storage devices are refill-processed in batches with little human interaction. In either case, the user provides his/her storage device to the authorized agent, along with prepayment in the form of check, credit card or private account. The storage device is credited with the prepayment amount using a PC which is executing to accomplish this in a secured and authorized environment. Once the storage device has been credited, it is returned to the user, who can then continue to freely use the system to issue postage until the next time the storage device must be refilled with pre-paid credits.

The other important contribution of the system is its updating of the central user database with information on renewed expiration date, user pre-paid balance, refilling station identification, etc. This information is invaluable in the validation step 1406.

As discussed above, the process loop gives the benefits of accounting and audit ability of pre-paid electronic postage to the adopting shipping service providers. Moreover, costs associated with collection of fees may be reduced because of guaranteed reimbursement by the trusted shipping service provider in one embodiment, or the prepayment of the fees directly to the shipping service providers in another embodiment. Additionally, these costs may be reduced due to their collection being simplified.

Furthermore, shipping service providers, by utilizing a common system, are given access to market segments, such

as home and small businesses, which they might not otherwise reach, but which may be penetrated by another of the shipping service providers. The trusted shipping service provider may not only benefit monetarily, such as through collecting a percentage of the fees associated with other shipping service providers' services, but may also benefit by the ability to have their shipping services presented along with, and possibly in a favorable position on a display screen, other shipping service providers providing a service not commonly associated with the trusted shipping service provider. Likewise, the present invention allows all participating shipping service providers to present their alternatives for consideration by a user.

The present invention may also provide functionality such as identifying particular options which are restricted by law or otherwise. For example, existing United States Postal Service regulations forbid direct substitution of use of private carriers for certain type of mailings. The present invention may recognize situations potentially in violation of such regulations and alert a user or prevent printing of postage for a forbidden alternative.

While the invention has been shown to work in conjunction with a postal indicia system, it should be understood that the indicia is simply a printed form of a data packet produced by the cooperative effort of the PC and the portable processor. The data packet contains information that can be used for look up purposes in the database. Thus, the data packet can serve to authenticate any data stream coming from the PC or can be to authenticate itself, thereby granting a user certain privileges, based upon the authentication. For example, the data packet could be associated with airline tickets, either in printed form or in electronic form. In either event, the data packet associated with the document to be checked is authenticated to prove the authenticity of the accompanying data. As noted, the "other" data can be printed (the data packet would then be printed and scanned into the system) or the "other" data could be electronic (the data packet could then be electronic and read directly).

The aforementioned E-STAMP and POSTAGEMAKER programs have been shown and described with respect to a WINDOWS operating environment on a PC. Of course, other means could be employed for implementing the present invention within a host processor-based system.

Although described with reference to a preferred embodiment utilizing a portable memory device, it shall be understood that the present invention may operate without such a device. For example, a preferred embodiment of the present invention may communicate with a centralized storage device such as shown and described in the above referenced application entitled "SYSTEM AND METHOD FOR REMOTE POSTAGE METERING", previously incorporated herein by reference. Likewise, the postage credit may be stored within the host system such as shown and described in U.S. Pat. No. 5,682,318, entitled "SYSTEM AND METHOD FOR STORING POSTAGE IN A COMPUTER SYSTEM", incorporated herein by reference.

Although the present invention and its advantages have been described in detail, it should be understood that various changes, substitutions and alterations can be made herein without departing from the spirit and scope of the invention as defined by the appended claims.

What is claimed is:

1. A method operable on a general multi-purpose processor-based system for authorizing a desired transaction to be conducted utilizing a particular provider, wherein information with respect to said desired transaction as conducted by each of a plurality of providers is presented for selection of said particular provider, said method comprising the steps of:

coupling a storage device to said general multi-purpose processor-based system, wherein said storage device securely stores transaction authorization therein, wherein said transaction authorization is updated to reflect transactions authorized;

determining desired transaction parameters;

determining a value of said transaction associated with two or more of said plurality of providers utilizing ones of said transaction parameters;

presenting each of said determined values for comparison; and

selecting said particular provider as a function of said comparison of said ones of said plurality of providers.

2. The method of claim 1, wherein said transaction authorization comprises a common credit value register for two or more providers of said plurality of providers.

3. The method of claim 1, wherein said transaction authorization comprises a unique credit value register for each provider of said plurality of providers.

4. The method of claim 1, wherein said transaction authorization comprises a credit value register and a transaction log of transactions authorized.

5. The method of claim 1, wherein the step of determining desired transaction parameters includes the step of:

- accepting information associated with said transaction parameters from a user of said general multi-purpose processor-based system.

6. The method of claim 1, wherein said storage device is a TMU button.

7. The method of claim 1, wherein said storage device is selected from the group consisting of:

- a smart card;
- a PCMCIA card; and
- a smart disk.

8. The method of claim 1, wherein the step of determining desired transaction parameters includes the step of:

- accepting information associated with said transaction parameters from a general purpose computer program operating on said general multi-purpose processor-based system.

9. The method of claim 8, wherein the general purpose computer program is selected from the group consisting of:

- a word processor;
- a database;
- a spread sheet; and
- an accounting system.

10. The method of claim 1, further comprising the step of: limiting access to said storage device to only authorized general multi-purpose processor-based systems.

11. The method of claim 10, wherein said authorized general multi-purpose processor-based systems include an authorized general multi-purpose processor-based system coupled locally to said storage device and an authorized general multi-purpose processor-based system coupled remotely to said storage device.

12. The method of claim 1, further comprising the step of: printing authorization information acceptable by said particular provider in conducting said transaction.

13. The method of claim 12, wherein said authorization information includes data from which said particular provider may verify prepayment of said transaction value.

14. The method of claim 13, wherein said authorization information includes a graphical security indicia.

15. The method of claim 1, wherein said transaction is associated with the transportation of a particular item.

16. The method of claim 15, further comprising the step of:

- automatically determining a weight of said particular item, wherein said transaction parameters utilized to determine said transaction value includes said automatically determined weight.

17. The method of claim 15, wherein the step of determining desired transaction parameters includes the step of: accepting shipping information associated with the transportation of said particular item.

18. The method of claim 17, wherein said shipping information includes information selected from the group consisting of:

- delivery location information;
- origination location information;
- item weight;
- urgency information; and
- item class information.

19. The method of claim 15, further comprising the step of:

- automatically determining a weight of said particular item, wherein said weight determination is based at least in part on item generation information provided by a coupled process utilized in creating the item.

20. The method of claim 19, wherein said coupled process is a word processor.

21. A general multi-purpose processor-based system for authorizing a desired transaction to be conducted utilizing a particular provider, wherein information with respect to said desired transaction as conducted by each of a plurality of providers is presented for selection of said particular provider, said system comprising:

- means for determining parameters with respect to said desired transaction;
- means for determining a value of said transaction associated with two or more of said plurality of providers utilizing ones of said transaction parameters;
- means for presenting each of said determined values for comparison;
- means for selecting said particular provider as a function of said comparison of said ones of said plurality of providers; and
- means for printing authorization information acceptable by said particular provider in conducting said transaction.

22. The system of claim 21, wherein said authorization information includes data from which said particular provider may collect payment of said transaction value.

23. The system of claim 21, wherein said means for determining desired transaction parameters comprises:

- means for accepting information associated with said transaction parameters from a general purpose computer program operating on said general multi-purpose processor-based system.

24. The system of claim 21, wherein said authorization information includes data from which said particular provider may verify prepayment of said transaction value.

25. The system of claim 24, wherein said authorization information includes a graphical security indicia.

26. The system of claim 21, further comprising:

- a storage device securely storing an amount of credit value therein;
- means for coupling said storage device to said general multi-purpose processor-based system, wherein said

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general multi-purpose processor-based system may interact with said storage device to retrieve a portion of said amount of credit value stored therein.

27. The system of claim 26, wherein said storage device includes a plurality of registers, wherein a plurality of discrete credit values are stored in said plurality of registers. 5

28. The system of claim 21, further comprising:

means for incrementing a credit value utilized in printing said authorization information.

29. The system of claim 28, wherein said incrementing means is operable by a trusted one of said plurality of providers and wherein said incrementing means comprises: 10

means for retrieving information from said storage device regarding transactions authorized by said system; and means for determining amounts due ones of said providers from said stored authorized transaction information. 15

30. The system of claim 21, further comprising:

means for storing a transaction log including records associated with the printing of authorization information of at least one of said plurality of providers. 20

31. The system of claim 30, wherein said transaction log is stored in mass storage device of said general multi-purpose processor-based system.

32. The system of claim 30, wherein said transaction log is stored in a secure portable storage device removably coupled to said general multi-purpose processor-based system. 25

33. The system of claim 21, wherein said transaction is associated with the transportation of a particular item.

34. The system of claim 33, further comprising:

means for automatically determining a weight of said particular item, wherein said transaction information utilized to determine said transaction value includes said automatically determined weight. 30

35. The system of claim 33, wherein said transaction parameters include information selected from the group consisting of:

delivery location information;

origination location information;

item weight;

urgency information; and

item class information.

36. The system of claim 33, further comprising the step of:

automatically determining a weight of said particular item, wherein said weight determination is based at least in part on item generation information provided by a coupled process utilized in creating the item. 45

37. The system of claim 36, wherein said coupled process is a word processor.

38. A system for retrievably storing transaction information for a plurality of transactions, wherein ones of said plurality of transactions are associated with different transaction facilitators of a plurality of transaction facilitators, said system comprising: 55

a memory for storing transaction information, wherein the memory is contained within the secure confines of a portable package also including a processor restricting access to said memory;

at least one input device accepting information input regarding aspects of a desired transaction;

a processor-based system in information communication with said memory and said at least one input device, 65 said processor-based system including circuitry interfaced so as to receive said desired transaction informa-

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tion input into said processor based-system, wherein said processor-based system is a general multi-purpose processor based system and said circuitry is defined at least in part by a computer program operating thereon, wherein said circuitry operates to determine information specific to ones of the plurality of facilitators conducting a transaction as a function of said desired transaction aspects, and wherein the portable package of the memory is removably coupled to said processor-based system to provide said information communication;

at least one interface device accepting said information specific to ones of the plurality of facilitators and presenting said accepted information specific to ones of the plurality of facilitators for selection of a particular one of said facilitators to conduct a transaction as a function of said desired transaction aspects; and

a printer coupled to said processor-based system adapted to print information authorizing said particular one of said facilitators to conduct a transaction as a function of said desired transaction aspects.

39. The system of claim 38, wherein said transaction information includes a value credit decremented in an amount corresponding to said particular one of said facilitators conducting a transaction as a function of said desired transaction aspects before said printer is enabled to print said information authorizing said particular one of said facilitators to conduct a transaction.

40. The system of claim 38, wherein said transaction information includes a record incremented in an amount corresponding to said particular one of said facilitators conducting a transaction as a function of said desired transaction aspects before said printer is enabled to print said information authorizing said particular one of said facilitators to conduct a transaction.

41. The system of claim 38, wherein said information authorizing said particular one of said facilitators to conduct a transaction is printed in a format selected from the group consisting of:

an authorizing indicia;

a way bill;

a manifest; and

a bill of lading.

42. A system for selecting a particular shipping service provider of a plurality of shipping service providers and printing an authorization for shipping an item via said particular shipping service provider, said system comprising:

a first processor device storing an amount of credit suitable for use in authorizing shipment of said item;

a second processor device having an interface adapted for coupling with said first processor device and for providing information communication there between, wherein said second processor device includes a user interface adapted to interface with a user to accept input associated with said shipment of said item, and wherein said second processor device includes circuitry coupled to said user interface adapted to determine a shipping rate associated with ones of said shipping service providers as a function of said input associated with said shipment of said item and to present said determined shipping rates to said user for selection of said particular shipping service provider, wherein said circuitry communicates at least said shipping rate associated with said particular shipping service provider to said first processor for decrementing said shipping rate

associated with said particular shipping service provider from said amount of credit prior to printing an authorization for shipping said item;

wherein determination of said shipping rates of at least one shipping service provider of said plurality of shipping service providers includes reference to a discrete database for said at least one shipping service provider; and

wherein said discrete database is remote to said first processor device.

43. The system of claim 42, wherein said input associated with said shipment of said item includes information selected from the group consisting of:

- a weight of said item;
- sender urgency information;
- a shipping distance;
- a zone from which said item is to be shipped; and
- a zone to which said item is to be shipped.

44. The system of claim 42, wherein said discrete database is stored on a device selected from the group consisting of:

- a CD ROM;
- a hard disk drive;

a floppy disk drive;
RAM; and
a portable memory.

45. The system of claim 42, wherein said first processor device is coupled to said remote database through an information communication link selected from the group consisting of:

- 10 a LAN;
- a WAN;
- the Internet; and
- a public switched network.

46. The system of claim 42, wherein said circuitry of said first processor device prevents printing said authorization for shipping said item for a particular one of said shipping service providers wherein shipment of said item according to said input associated with said shipment of said item is prohibited.

47. The system of claim 42, wherein said second processor device comprises a general multi-purpose processor based system.

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Internet users can now get **shipping** rates from all major shippers in just a few seconds. Simply enter your origin, anywhere in the U.S. is OK, and destination, worldwide, along with your package weight and dimensions. The free service will return every method possible that you can use to ship your package and arrange the results in cost order, and color code the results by approximate transit time. World Wide Web: <http://www.wwmerchant.com/iship>

NDMA Online

The Nonprescription Drug Manufacturers Association has launched on the Web. It's new site includes information, perspective and background on a wide range of issues involving self-care with nonprescription medicines, including regulatory and legislative initiatives, the process of transferring medicines from prescription to nonprescription status (Rx-to-OTC switch), product labeling, consumer trends and industry self-regulation. World Wide Web:
<http://www.ndmainfo.org>

Electric Vehicles Ready To Roll

The day isn't too far off when electric passenger cars will be a reality for many consumers. The EV World Web site takes Toyota's Prius for a test drive, and also has information on electric police bikes, converting a Porsche 924 to electric power, an EV database and more. In addition to the text, the site includes lots of Real Audio and Video. World Wide Web:
<http://www.evworld.com>

Computers You Used To Own

The Obsolete Computer Museum is the home of everything that was once great in the world of computing, from Apple's Lisa and the IBM PCjr to the Kaypro II and Tandy TRS-80. Along with each entry, you can usually find images of the machine, information about the basic hardware and more. World Wide Web: <http://ncsc.dni.us/fun/user/tcc/cmuseum/cmuseum.htm>

Your Health Tackles Armchair Athletes

Armchair athletes can take a break from watching the 1998 Olympic Winter Games in Nagano to learn how they can become winners at personal health and fitness. The Your Health Web site is exploring ways to achieve a personal best, with a focus on why exercise is important and how to

improve health through exercise and good nutrition. World Wide Web:
<http://www.yourhealth.com>

InfoSpace Launches Free Real Time Stock Quotes

InfoSpace has become the first Web service to offer real-time stock quotes, free of charge. The real-time quote service is part of a complete investment section featuring stock news, charts, a complete market review, comprehensive company research and SEC filings. World Wide Web:
<http://www.infospace.com>

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(19980218/INTERNETUP2/PHOTO)

TICKER: IBM (NYSE) (53%); IBM (LSE) (53%);

INDUSTRY: NAICS334119 OTHER COMPUTER PERIPHERAL EQUIPMENT MANUFACTURING (53%); NAICS334112 COMPUTER STORAGE DEVICE MANUFACTURING (53%); NAICS334111 ELECTRONIC COMPUTER MANUFACTURING (53%); SIC3577 COMPUTER PERIPHERAL EQUIPMENT, NEC (53%); SIC3572 COMPUTER STORAGE DEVICES (53%); SIC3571 ELECTRONIC COMPUTERS (53%);

ORGANIZATION: NONPRESCRIPTION DRUG MANUFACTURERS ASSOCIATION (90%);

JAPAN (87%); UNITED STATES (79%);

CITY: TOKYO, JAPAN (87%);

COMPANY: INTERNATIONAL BUSINESS MACHINES CORP (53%); INTERNATIONAL BUSINESS MACHINES CORP (53%); VIDEO WORLD (53%); NONPRESCRIPTION DRUG MANUFACTURERS ASSOCIATION (90%);

SUBJECT: ONLINE INTERNET & WWW (91%); OVER-THE-COUNTER DRUGS (90%); ELECTRIC VEHICLES (90%); AUTOMOTIVE TECHNOLOGY (90%); CONSUMER HEALTH INFORMATION (78%); SELF REGULATING ORGANIZATIONS (77%); EXERCISE & FITNESS (77%); MOTOR VEHICLES (77%); OLYMPICS (77%); SPORTS (77%); PHARMACEUTICALS ASSOCIATIONS (77%); PHARMACEUTICALS INDUSTRY (74%); WEB SITES (73%); PRODUCT LABELING (70%); PHARMACEUTICAL PREPARATION MFG (68%); NUTRITION (60%);

LOAD-DATE: July 9, 1998

LANGUAGE: ENGLISH

TYPE: NEWS

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-149-

Search Terms: [InterShipper](11)

Narrow Search: (shipping)

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US006047264A

United States Patent [19]

Fisher et al.

[11] Patent Number: 6,047,264
[45] Date of Patent: *Apr. 4, 2000

[54] METHOD FOR SUPPLYING AUTOMATIC STATUS UPDATES USING ELECTRONIC MAIL

[75] Inventors: Alan S. Fisher, Fremont; Samuel Jerrold Kaplan, Hillsborough, both of Calif.

[73] Assignee: Onsale, Inc., Menlo Park, Calif.

[*] Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

[21] Appl. No.: 08/725,635

[22] Filed: Oct. 8, 1996

Related U.S. Application Data

[63] Continuation-in-part of application No. 08/695,095, Aug. 8, 1996, abandoned.

[51] Int. Cl. 7

G06F 15/21

[52] U.S. Cl. 705/26; 705/40; 705/27; 705/28; 705/29; 705/7; 705/8; 705/11

[58] Field of Search 705/26, 27, 28, 705/29, 7, 8, 11, 1

[56] References Cited

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4,975,841 12/1990 Kehnemuyi et al. 705/32

Primary Examiner—Allen R. MacDonald

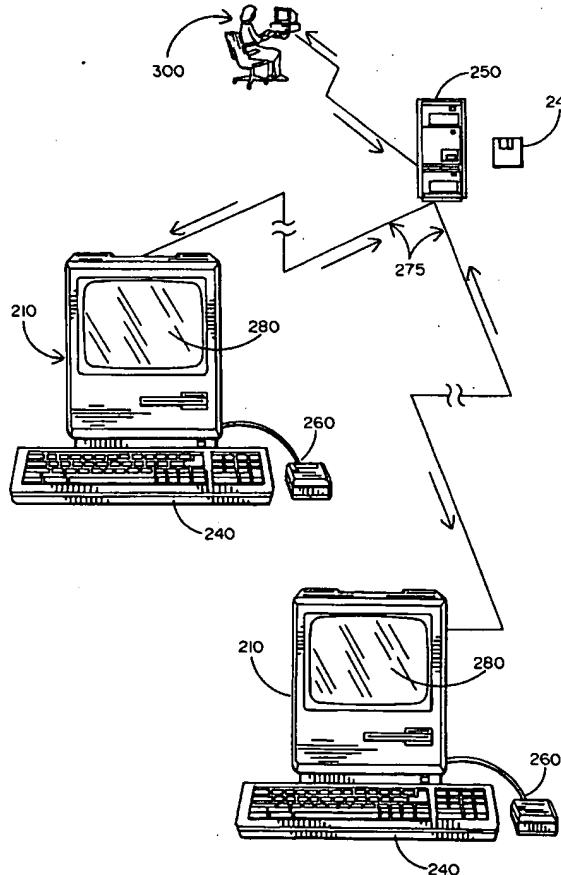
Assistant Examiner—Jagdish Patel

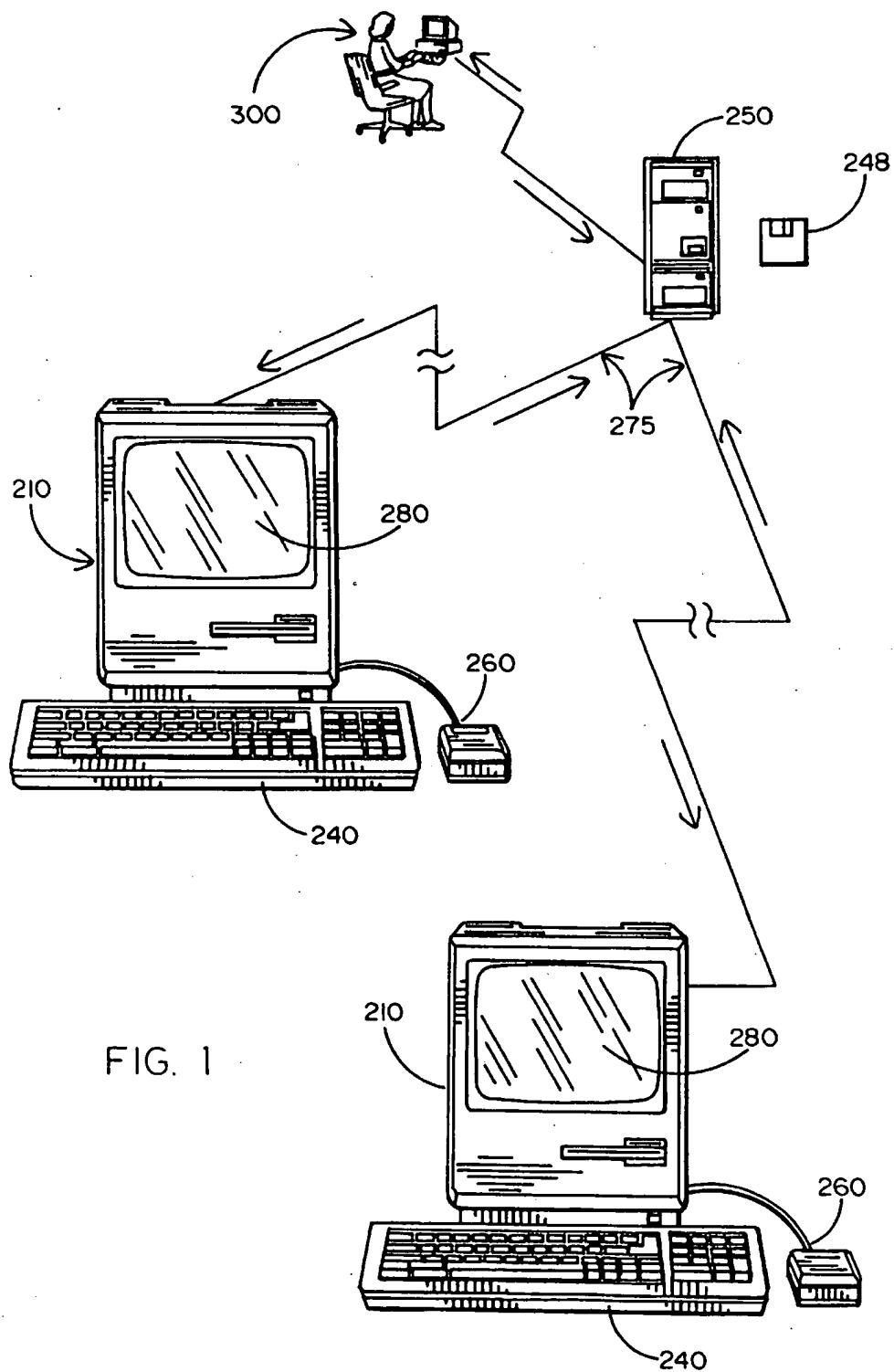
Attorney, Agent, or Firm—Adam H. Tachner; Crosby, Heafey, Roach & May

[57] ABSTRACT

A method is disclosed for automatically updating the status of customers' orders and shipments via electronic mail without using a human attendant to create and send the electronic mail messages. Preferably implemented in software, the updating method allows a large set of customers to be periodically updated over a computer or communications network via electronic mail. The method utilizes a database for maintaining order and shipping status and other relevant information.

14 Claims, 5 Drawing Sheets





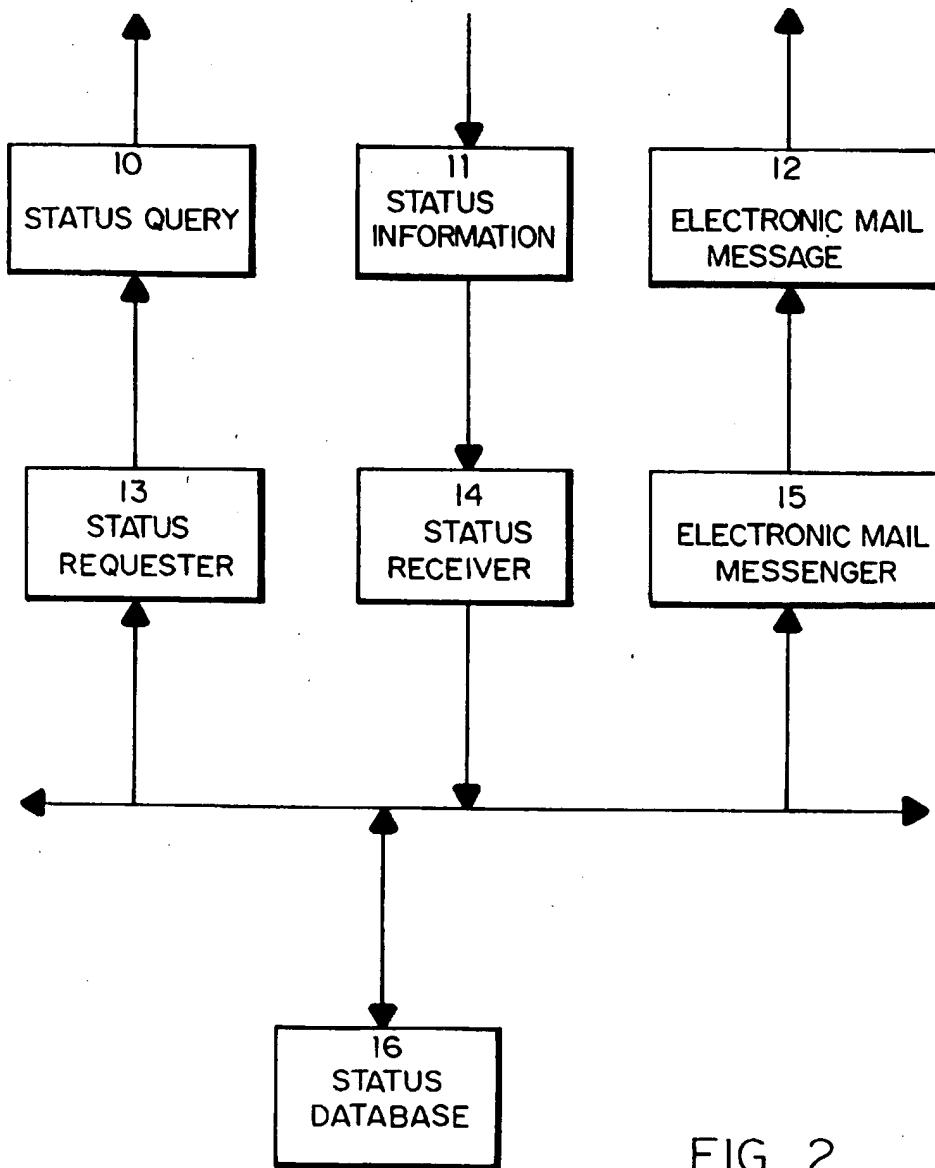


FIG. 2

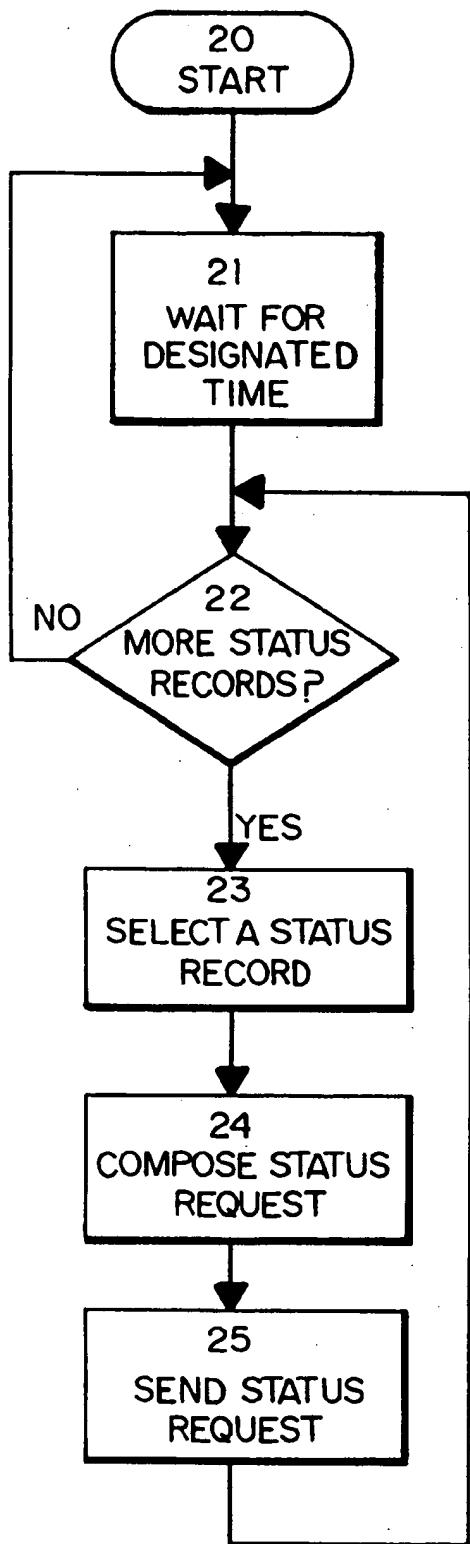


FIG. 3

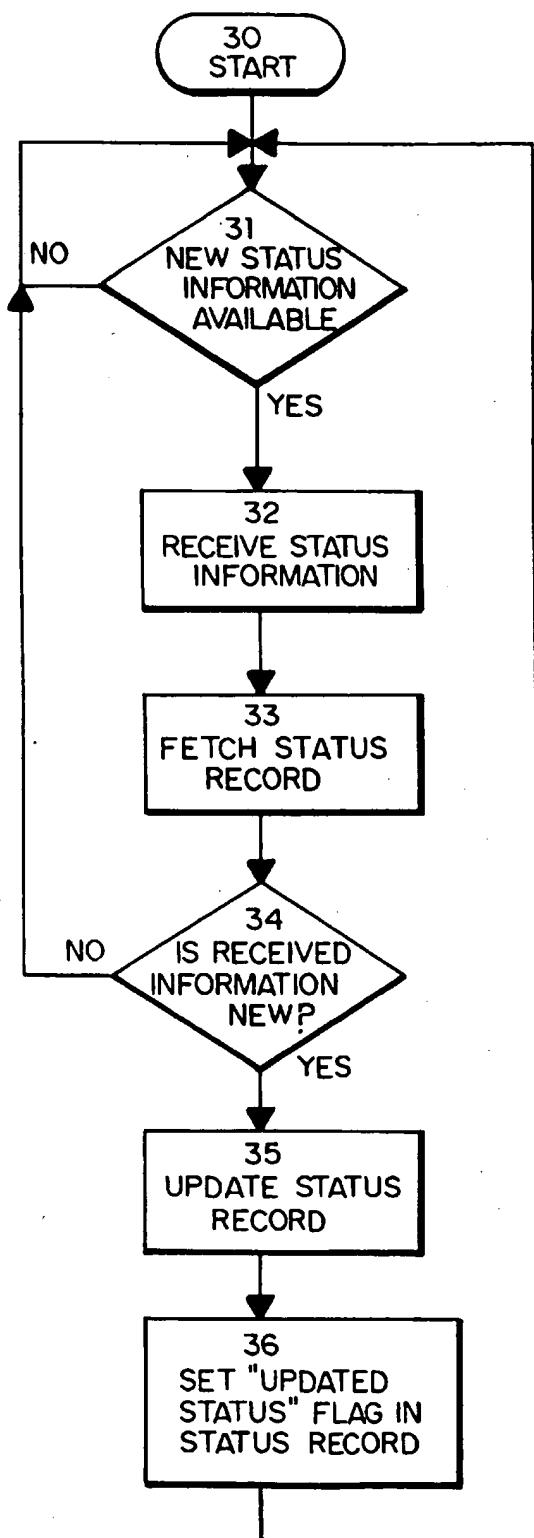


FIG. 4

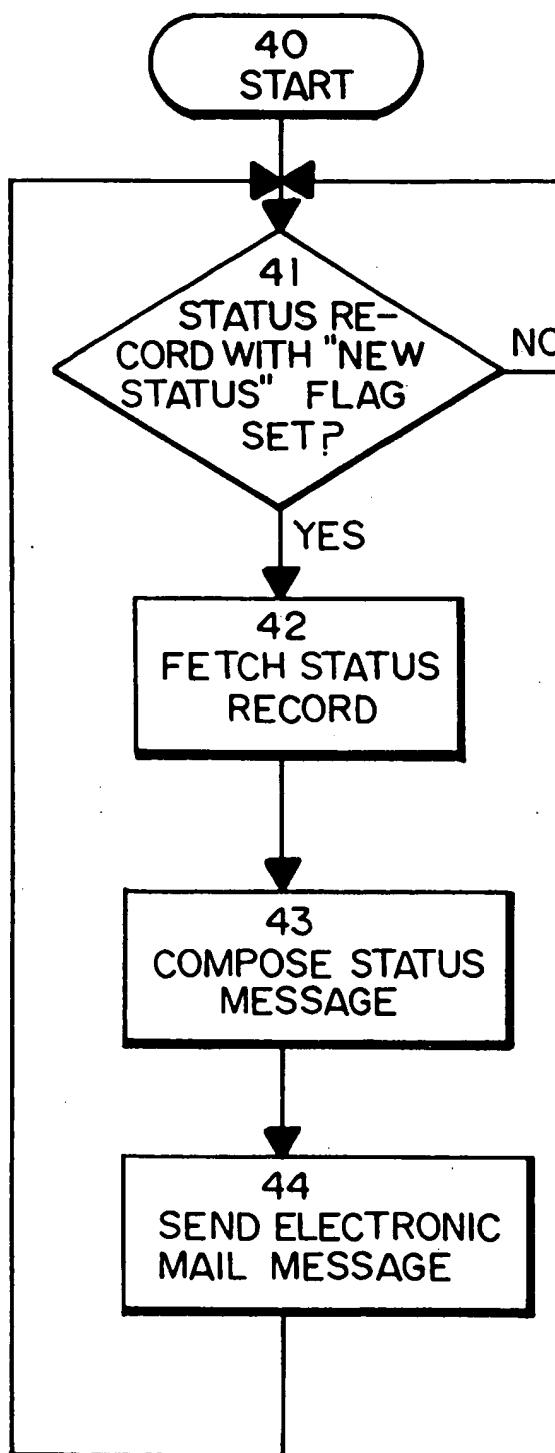


FIG. 5

METHOD FOR SUPPLYING AUTOMATIC STATUS UPDATES USING ELECTRONIC MAIL

This application is a continuation-in-part of U.S. patent application Ser. No. 08/695,095, filed Aug. 8, 1996 now abandoned.

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates generally to electronic commerce and more particularly to updating customers as to the status of their orders and order shipments.

2. Description of the Related Art

In the mail order industry, it is common practice to notify customers by mail when their orders are backlogged or their shipments will be delayed for some reason. The advent of wide area electronic networks like the Internet has made it possible for customers to query the status of their orders and shipments by directly accessing the merchants' and shippers' information systems. For example, both Federal Express® (FedEx®) and United Parcel Service (UPS®) have world wide web sites on the Internet where customers can track the shipping status of their packages by simply inputting the package's tracking number to a computer form on a web page.

There is an advantage however, to notifying customers by mail when their shipments will be delayed, because the customer is not required to take any action to receive this notification—that is, the customer does not have to proactively access the Internet or other network, go to the shipper's world wide web site, and obtain and input a parcel tracking number in order to check on the shipping status.

In U.S. Pat. No. 5,428,778 to Brookes, a keyword based profile is used to match information coming into a system with the users' interests. In Brookes, the user is alerted to the presence of the information in the database (perhaps because there is a delivery fee associated with the information), but the information is not actually delivered to the user.

Also in the related art are several Internet-based electronic mail systems that deliver information to users daily via E-mail based on personal profiles. There are, for example, several stock quotation services that electronically mail a list of a user's personal favorite stock prices each day. Unlike Brookes, such systems do deliver the information directly to the user. However, the user is required to submit an interest profile to the system in order to receive feedback.

There is a need in the art, therefore, for a system and method for automatically notifying a party of the status of a delivery without requiring submission of a status request or special profile information from the party.

SUMMARY OF THE INVENTION

The present invention overcomes the disadvantages of the background art by providing a method and system for automatically providing customers with their order status via electronic mail over a computer network without the aid of a human customer service representative and without the need for user profile information.

To address the shortcomings of the background art, the present invention provides, in a computer network enabling communication between a plurality of computers, a method for processing and transmitting update information, implemented as a program on a first computer within said network, the method comprising the steps of creating a

record in response to an order submitted to the first computer by a first party, retrieving status information relevant to the order, updating the record in response to the retrieved status information, generating an electronic mail status message reflective of the updated record, and transmitting the electronic mail status message to the first party across the network.

For example, when a customer places an order with a merchant, the customer provides the merchant with an electronic mail address. Then, the merchant ships the order via a common carrier such as FedEx, UPS or the postal service. The system of the present invention periodically interrogates the carrier's information system via a computer network to check the transit status of the order. When the

transit status, location, or other relevant information changes, the system automatically composes and transmits an electronic mail message to the customer, informing the customer of the status of the shipment. The system may send messages notifying the customer of such common events as (1) when the order is initially sent to the shipper, (2) when the shipment leaves the shipper's distribution center, (3) the current or approximate physical location of the shipment once the shipment is in transit (e.g., headed westbound on Interstate 70 between St. Louis and Kansas City), (4) when the shipment reaches a distribution terminal for transfer to another truck or form of carriage, and (5) when the shipment is received at the customer's location. Notifying business customers that the shipment has been received at a site is especially important because it often takes one to two days for a company's internal mail system to deliver a package to the customer's desk once it has been received at the site's receiving dock, front office or mail room.

The primary advantage of this system is that it results in higher customer loyalty because customers are kept well informed of the status of their orders or shipments without taking any additional action beyond providing an electronic mail address to the merchant or shipper. Moreover, since the cost of electronic mail transmissions is extremely low, the system and method lower costs for merchants or shippers to provide status information to their customers.

BRIEF DESCRIPTION OF THE DRAWINGS

The aforementioned advantages of the invention, as well as additional advantages thereof, will be more fully understood as a result of a detailed description of the preferred embodiment when taken in conjunction with the accompanying drawings in which:

FIG. 1 illustrates a preferred computer environment for implementing the system and method of the present invention.

FIG. 2 is block diagram of components illustrating a preferred embodiment of the present invention.

FIG. 3 is a flowchart illustrating the status requester and its method of operation.

FIG. 4 is a flowchart illustrating the status receiver and its method of operation.

FIG. 5 is a flowchart illustrating the electronic mail messenger and its method of operation.

DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT

The present invention is preferably implemented as a computer program 248 running on a central server host computer shown in FIG. 1, attached to a wide area network 275 accessible by many potential customers through remote

terminals 210 using keyboard 240, pointing device 260 and monitor 280. A preferred network for implementing the present invention is the Internet which is accessible by a significant percentage of the world population, although the network may also be a local area or limited area accessible network.

Information about the customers and their respective orders is maintained in a status database 16 such as the one shown in FIG. 2. Status database 16 may be maintained on server 250 shown in FIG. 1. Individual customer orders may be placed in this database either by order entry personnel 300 or electronically by order entry systems also attached to wide area network 275 of FIG. 1. Status information in status database 16 may be updated manually by order entry personnel or electronically by other means such as status receiver 14 shown in FIG. 2.

Periodically via status Query 10, status requester 13, sends a status request to another host computer on wide area network 275, such as a common carrier shipping service like UPS or FedEx. Status information 11 is returned and received by status receiver 14 which places the new status information in status database 16. When status receiver 14 updates the status in status database 16, it sets a flag on the particular database record indicating a change in status.

Periodically, electronic mail messenger 15 checks status database 16, to see if the status of any record has changed, by examining the records' status flags. If a record has been flagged, then electronic mail messenger 15 composes an electronic mail message 12 based on the new status information in status database 16. This electronic mail message 12 is transmitted to the customer over the wide area network 275.

FIG. 3 illustrates the operation of status requester 13. In a preferred embodiment, the status requester is continually running a program that periodically requests status updates from other host computers on wide area network 275. After waiting 21 for a designated time, which for a shipping status update is preferably every six to twenty-four hours, status database 16 is checked 22 to see if there are more status records. If so, then a status record is selected 23 and a status request is composed 24. This status request is sent 25 to another host computer on wide area network 275. This requesting process continues until each of the status records in status database 16 have been checked 22.

FIG. 4 illustrates the operation of status receiver 14. In the preferred embodiment, the status receiver is a continually running program that periodically receives status information 11 from another host computer on wide area network 275 based on requests generated by status requester 13. Wide area network 275 is continually checked for new status information 11. If new status information is found available at 31 then the status information is received 32 and the corresponding status record is fetched 33 from status database 16. The information is compared with that in the status record to determine 34 if the received information is new. If the received information is new, then the status record is updated 35 in status database 16 and the Updated Status flag is set 36 in the status record.

FIG. 5 illustrates the operation of electronic mail messenger 15. In a preferred embodiment, the electronic mail messenger is a continually running program that periodically checks 41 status database 16 to see if any records have an "Updated Status" flag set. If so, the appropriate status record is fetched 42 from status database 16 and an electronic mail message is composed 43 regarding the new status information. This electronic mail message is then preferably sent 44 to the recipient over wide area network 275.

One skilled in the art to which the present invention pertains will recognize that the various components of the system may communicate between themselves in a variety of ways. In a preferred embodiment, status receiver 14 signals electronic mail messenger 15, via an "Updated Status" flag in the appropriate database records, that a new update message should be sent. However, status receiver 14 could directly communicate with electronic mail messenger 15 to send a status update message without setting a signaling flag in status database 16 and awaiting discovery of such a flag by the electronic mail messenger.

One skilled in the art to which the present invention pertains will further recognize that components of status requester 13 and status receiver 14 may be combined into a single module that communicates with a remote host computer in a synchronous fashion. For example, the status requester portion of the combined module could send a status request to the remote host computer and wait for the status information to be received before proceeding to submit the next status request to the remote host computer. This type of synchronous operation is quite common in electronic data interchange applications.

The present invention is preferably implemented as a software program on a host computer such as 250 in FIG. 1 within a network 275 such as the Internet. The program may be loaded onto computer 250 from disk 248 or a similar storage medium.

A general description of the present invention as well as a preferred embodiment of the present invention has been set forth above. Those skilled in the art to which the present invention pertains will recognize and be able to practice additional variations to the methods and system described within the teachings of this invention. Accordingly, all such modifications and additions are deemed to be within the scope of the invention which is to be limited only by the appended claims.

What is claimed is:

1. In a computer network enabling communication between a plurality of computers, a method comprising the steps of:
 - (a) receiving information relevant to an order submitted by a user;
 - (b) collecting information relevant to an order processing status of said order;
 - (c) updating said information received at step (a) with said order processing status information collected at step (b);
 - (d) generating a message containing said order processing status information collected at step (b);
 - (e) automatically transmitting said message generated at step (d) to said user across said network without interaction from the user.
2. The method of claim 1, wherein said order processing status information collected at step (b) relates to shipment status of an item specified in said order.
3. The method of claim 1, wherein said order information received at step (a) is contained on a first computer, order processing status information collected at step (b) is contained on a second computer removed from said first computer, and said first and second computer are communicatively linked across said network.
4. The method of claim 1, wherein said step (c) is performed manually.
5. The method of claim 1, wherein said order information received at step (a) is stored on a database within a first computer.

6. The method of claim 5, further comprising separately storing said order processing status information collected at step (b) on a database in a second computer.

7. The method of claim 1, wherein said message generated at step (d) is in an electronic mail format, and the user is identified by a network address.

8. In a computer network enabling communication between a plurality of computers, a system comprising:

storage means associated with a first computer for storing order information relating to an order submitted by a user;

requesting means associated with said first computer for automatically and periodically requesting order processing status for said order from a second computer; updating means associated with said first computer for receiving said order processing status from said second computer, and for automatically updating said order information with said order processing status;

message generating means for automatically generating a message containing said order processing status responsive to a change in said order processing status; and,

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message transmission means for automatically transmitting said message across said network to a third computer associated with the user without interaction from the user.

9. The system of claim 8, wherein said order processing status indicates shipment of an item specified in said order.

10. The system of claim 8, wherein said first and second computers are remote each from the other and are communicatively linked across said network.

11. The system of claim 8, wherein said updating means is manually actuatable for input of update information.

12. The system of claim 8, wherein said order information is stored on a database within said first computer.

13. The system of claim 12, wherein said order processing status is stored in a database in said second computer.

14. The system of claim 12, wherein said message is in an electronic mail format, and the user is identified by a network address.

* * * * *

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UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 6,047,264
DATED : April 4, 2000
INVENTOR(S) : Fisher et al.

Page 1 of 2

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 4,

Line 38, cancel claims 1-7 and insert the following claims 1-8:

1. In a computer network enabling communication between a plurality of computers, a method comprising the steps of:
 - (a) receiving and storing at a first computer order information relating to an order submitted by a user;
 - (b) requesting automatically and periodically order processing status for said order from a second computer;
 - (c) receiving at said first computer said order processing status requested at step (b);
 - (d) updating said information with said order processing status received at step (c);
 - (e) generating automatically a message containing said order processing status received at step (c) responsive to a change in said order processing status; and,
 - (f) automatically transmitting said message across said network to a third computer associated with the user without interaction from the user.
2. The method of claim 1, wherein said order processing status requested at step (b) relates to shipment status of an item specified in said order.
3. The method of claim 1, wherein said first and second computers are removed each from the other and are communicatively linked across said network.
4. The method of claim 1, wherein said step (d) is performed manually.
5. The method of claim 1, wherein said order information received at step (a) is stored on a database within said first computer.
6. The method of claim 5, further comprising separately storing said order processing status requested at step (b) on a database in said second computer.
7. The method of claim 1, wherein said message generated at step (e) is in an electronic mail format, and the user is identified by a network address.
8. The method of claim 1, wherein said step (d) is performed automatically.

Column 5, line 7; Column 6, lines 6, 8, 11, 14, 16 and 19, renumber claims 8-14 to 9-15.

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 6,047,264
DATED : April 4, 2000
INVENTOR(S) : Fisher et al.

Page 2 of 2

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 6,

Lines 6, 8, 11 and 14, for the claim reference number "8", each occurrence, should read -- 9 --.

Lines 16 and 18, for the claim reference number "12", each occurrence, should read -- 13 --.

Signed and Sealed this

Nineth Day of September, 2003



JAMES E. ROGAN
Director of the United States Patent and Trademark Office

-161 -

United States Patent [19]

Pauly et al.

[11] Patent Number: 4,958,280

[45] Date of Patent: Sep. 18, 1990

[54] APPARATUS AND METHOD FOR SATISFYING DISPOSABLE CONTACT LENS PRESCRIPTIONS

[75] Inventors: Thomas E. Pauly; Jeffrey C. Van Doren; John P. Hennessey; James M. Christiansen, all of Jacksonville, Fla.

[73] Assignee: Vistakon, Inc., Jacksonville, Fla.

[21] Appl. No.: 72,184

[22] Filed: Jul. 10, 1987

[51] Int. Cl. 5 G06F 15/20

[52] U.S. Cl. 364/403; 364/401

[58] Field of Search 364/403, 401, 408; 235/385, 381

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Primary Examiner—Michael R. Fleming

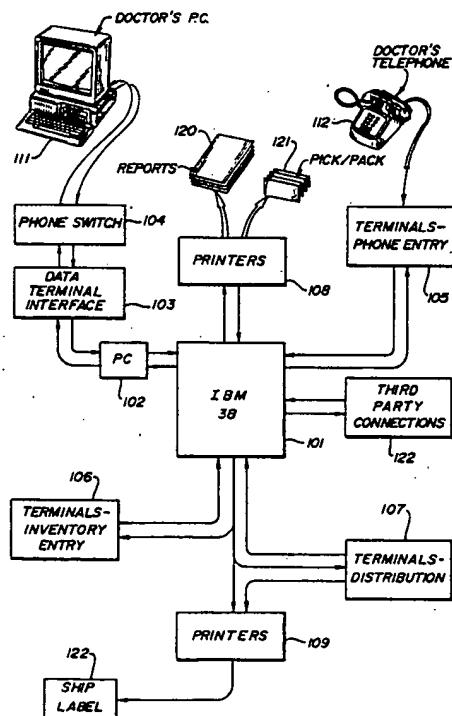
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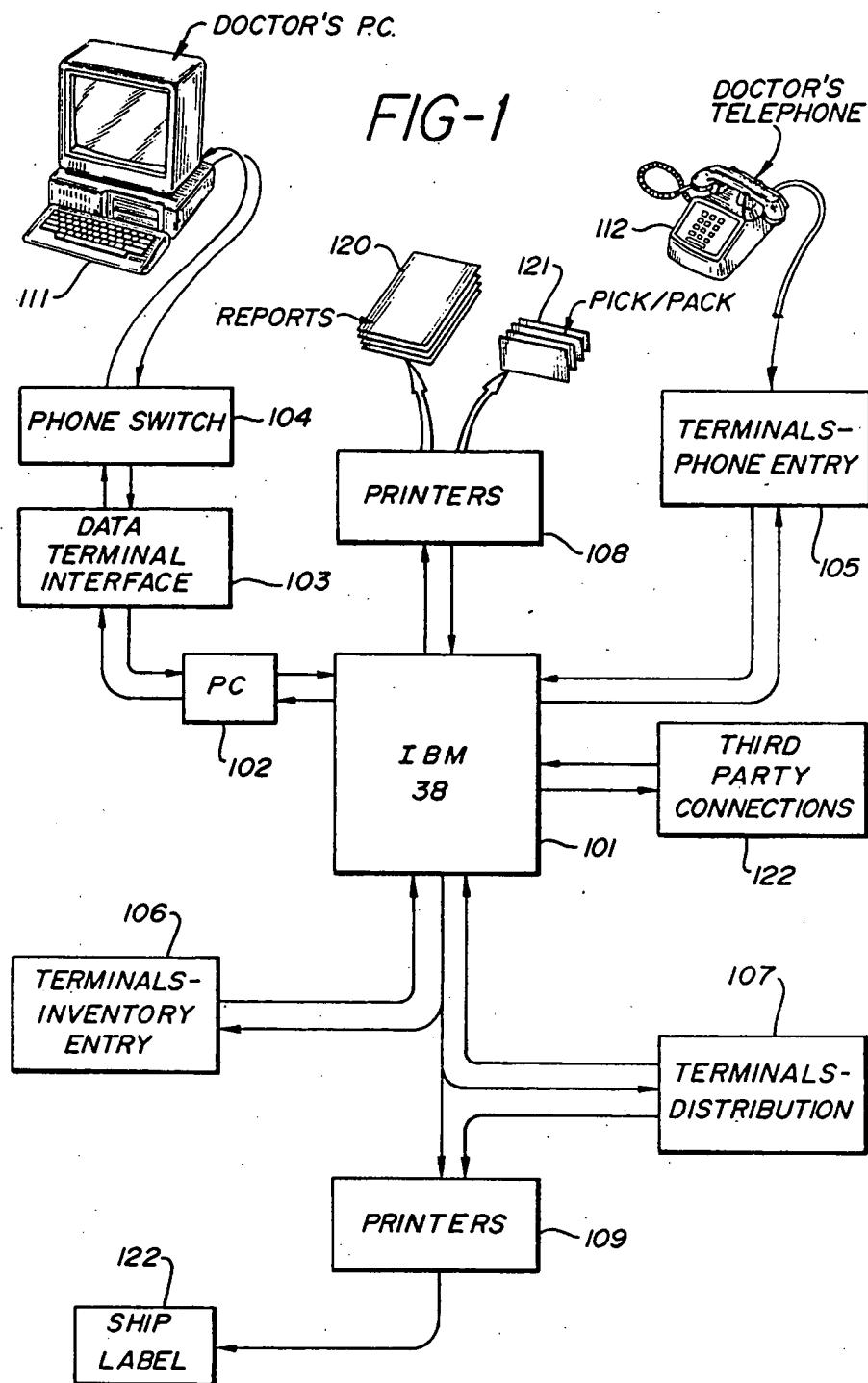
Attorney, Agent, or Firm—Audley A. Ciamporcero, Jr.

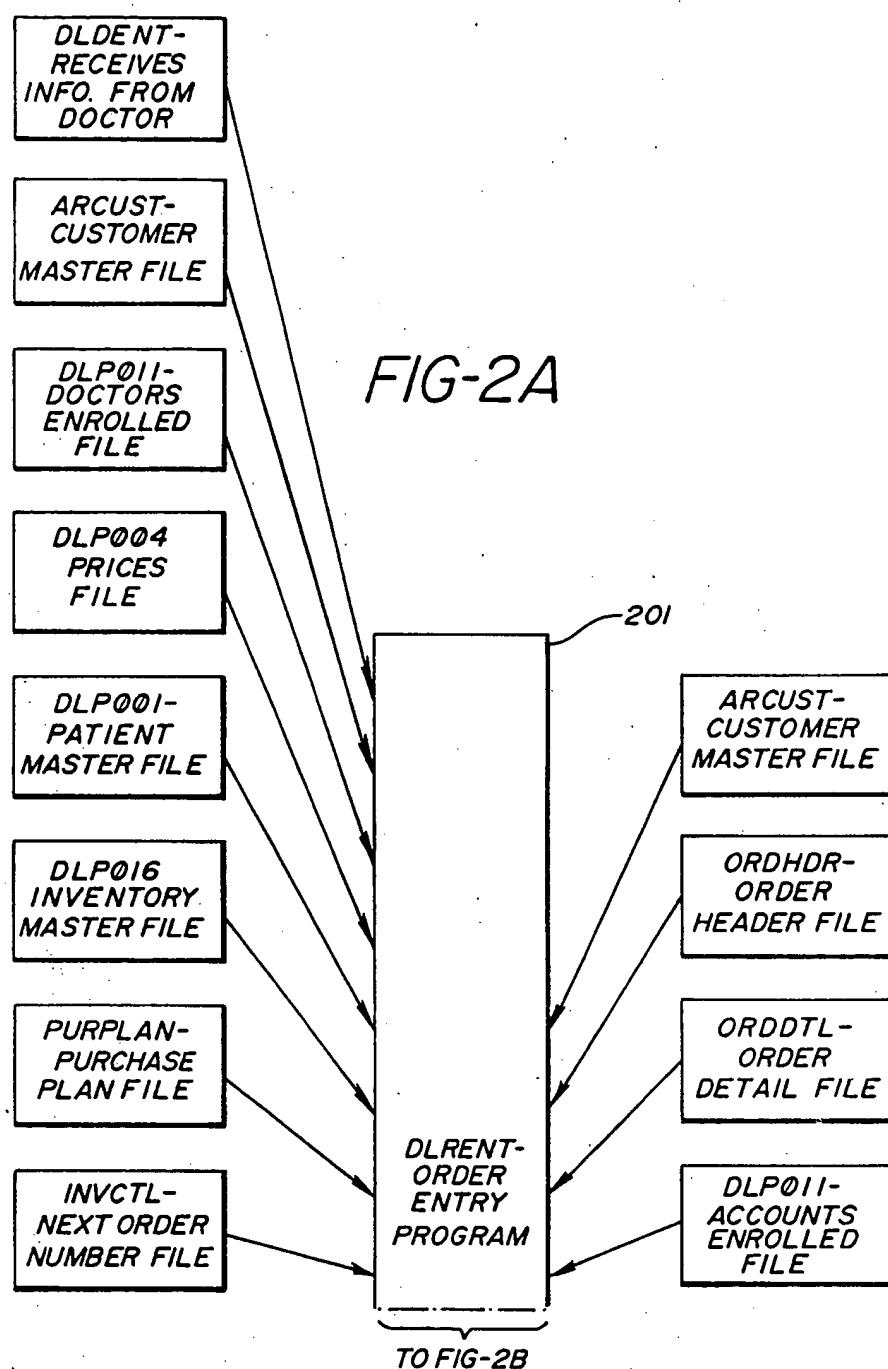
[57] ABSTRACT

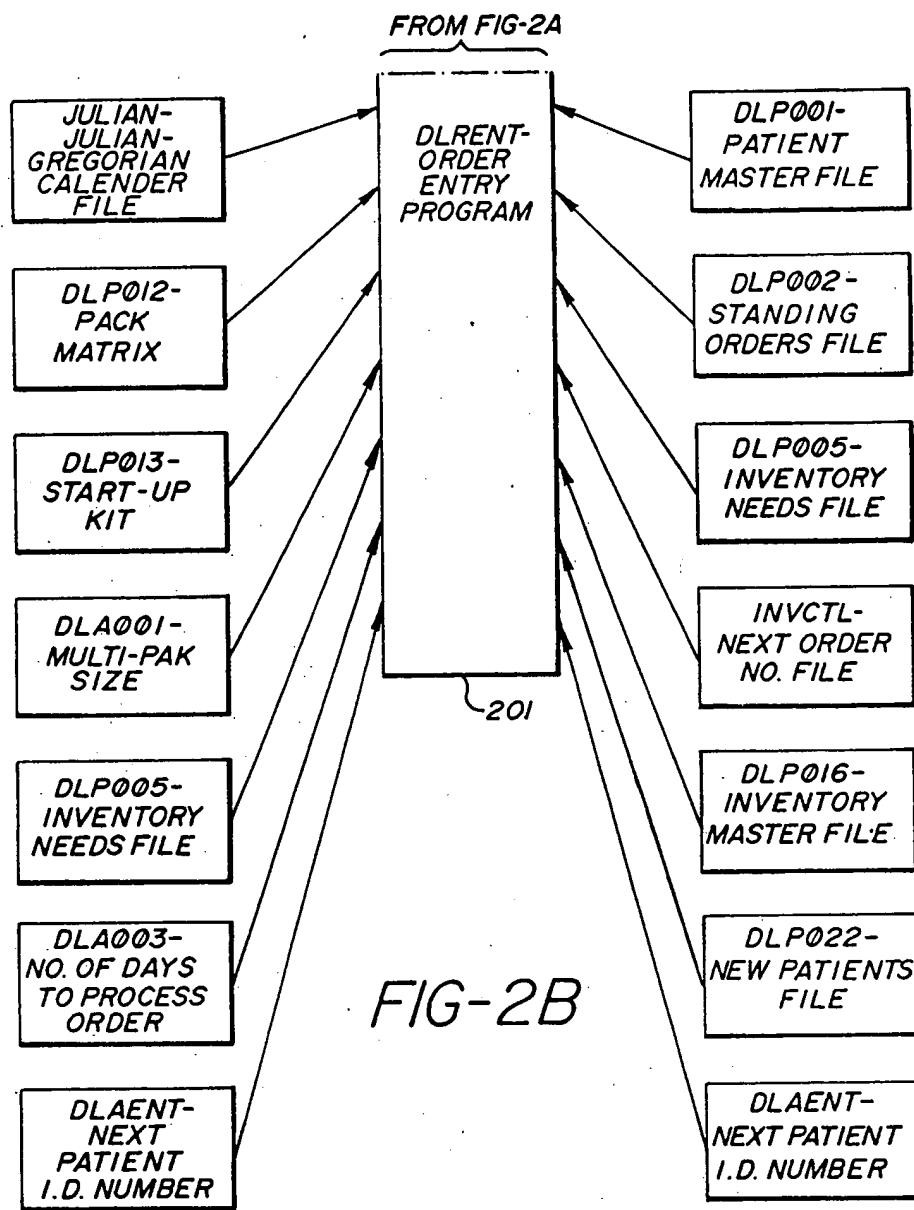
Systems and methods are provided for the accurate, ongoing filling of prescriptions for disposable contact lenses. In a preferred system, a central ordering/inventory computer is associated with satellite PCs at which attending eye care professionals can place orders. In preferred methods, periodic serial to batch mode conversions merge new orders, standing orders, order changes, as well as other updates and deletions. Patient history files allow maintenance of data bases for the eye care professionals as well as for the manufacturer of lenses.

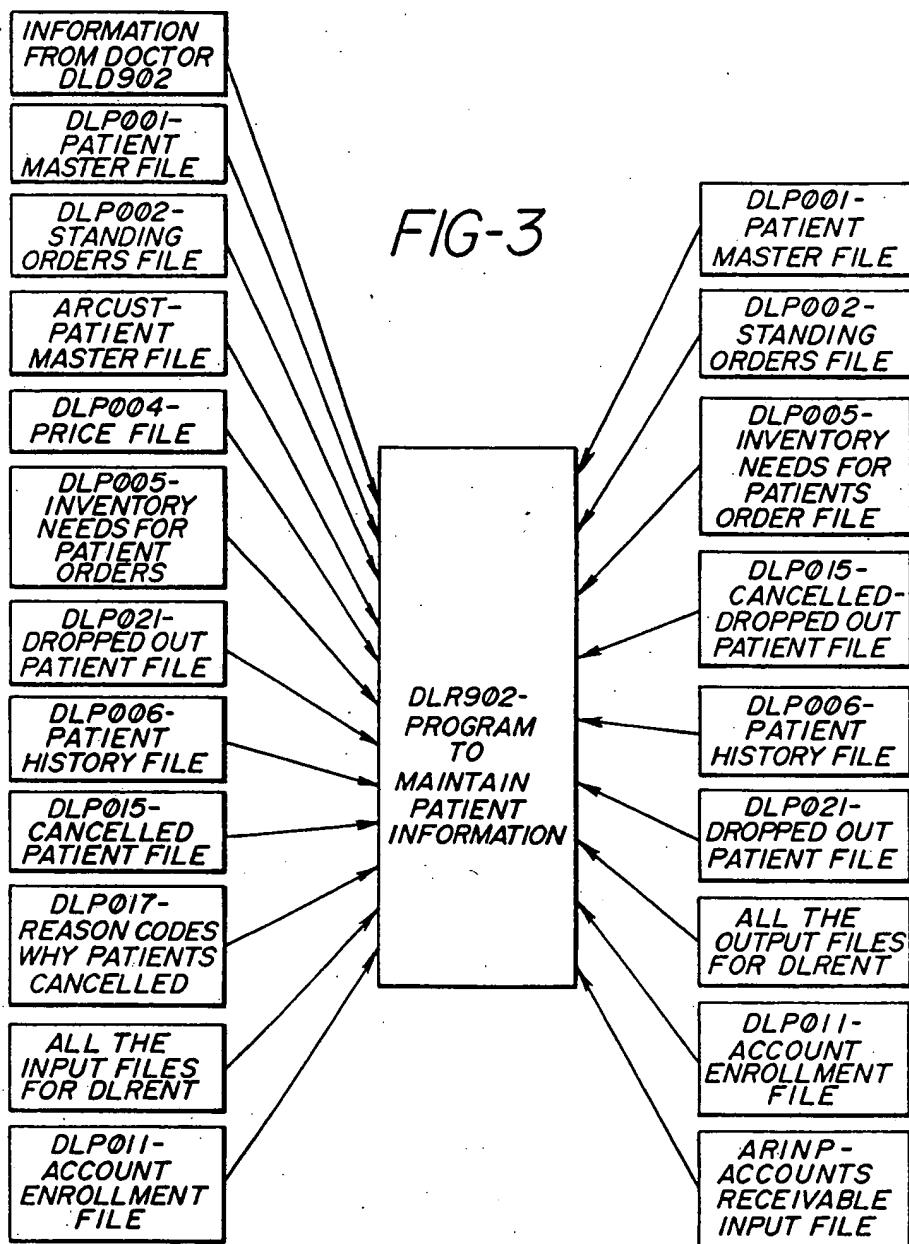
10 Claims, 14 Drawing Sheets

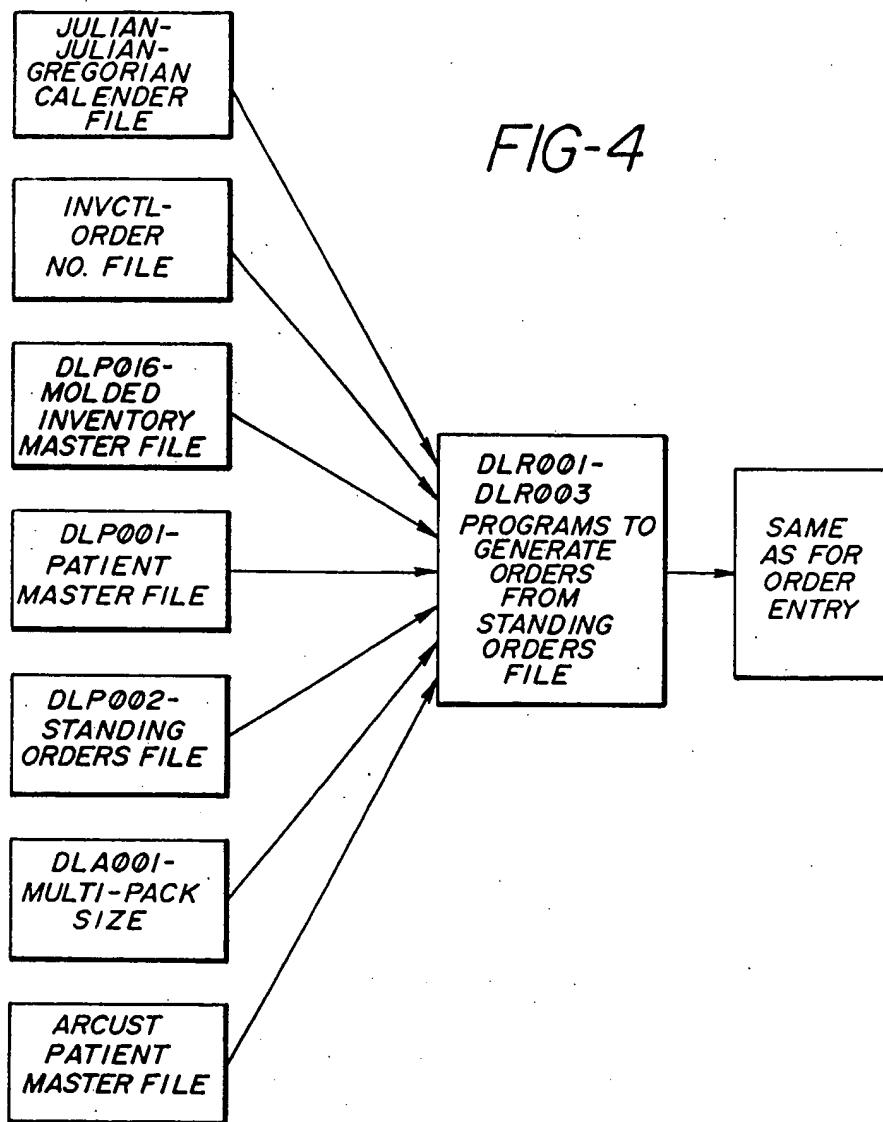


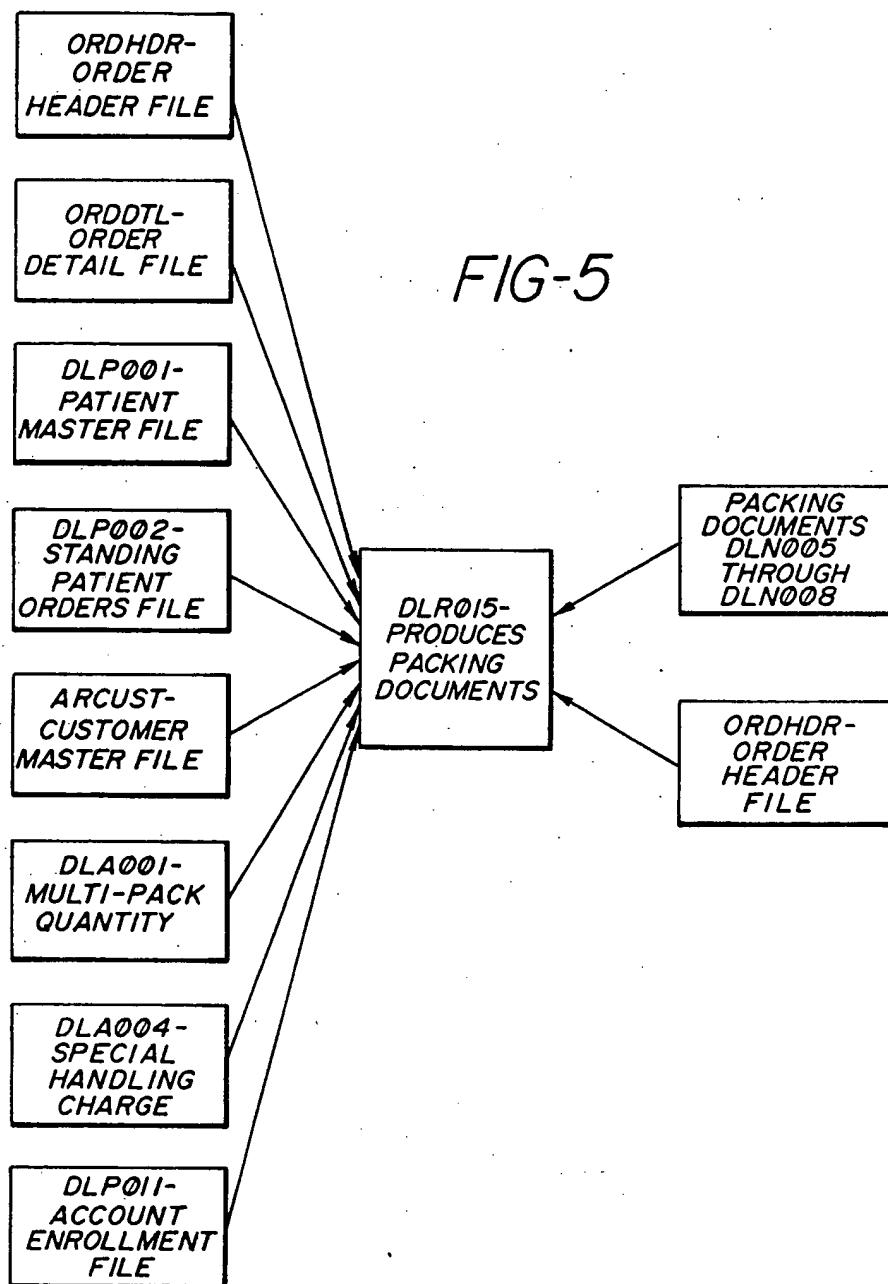


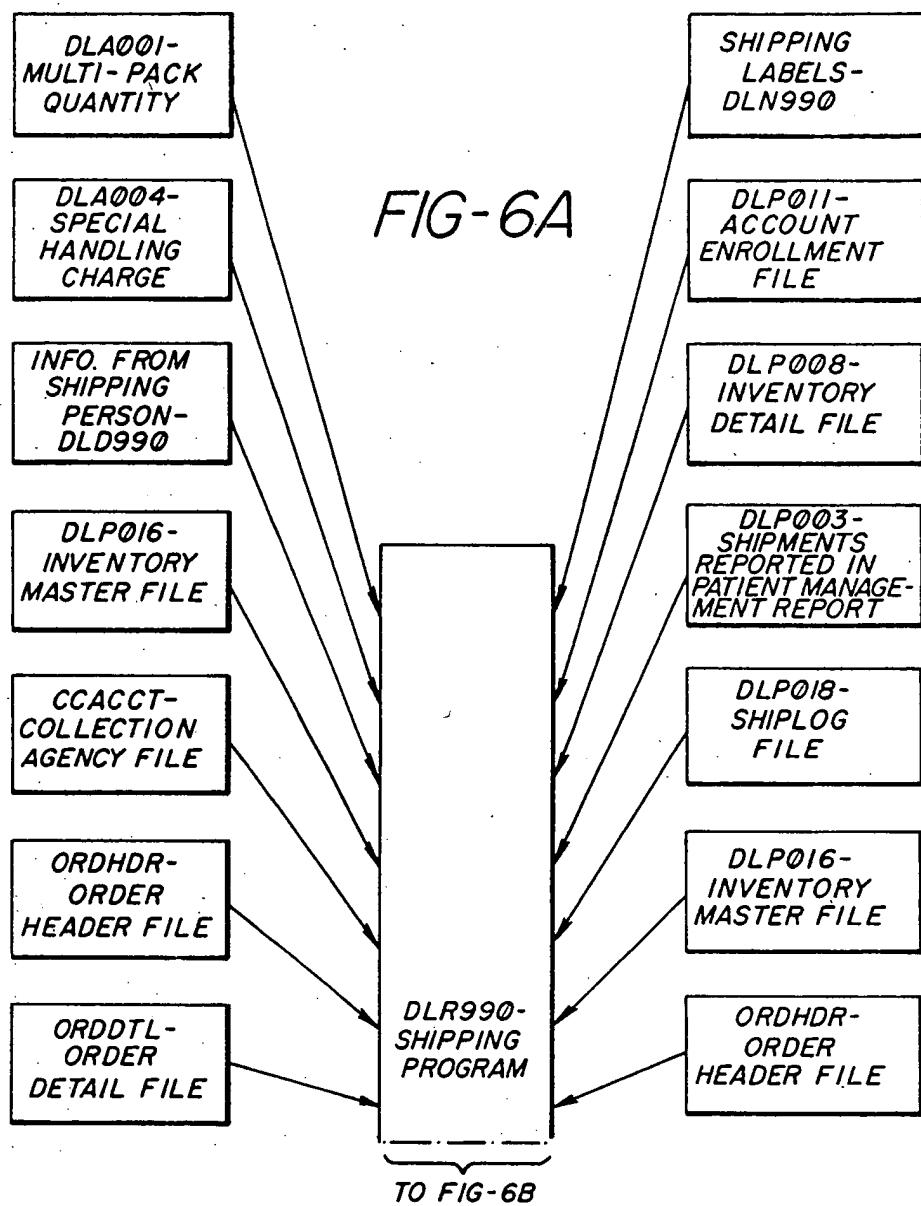












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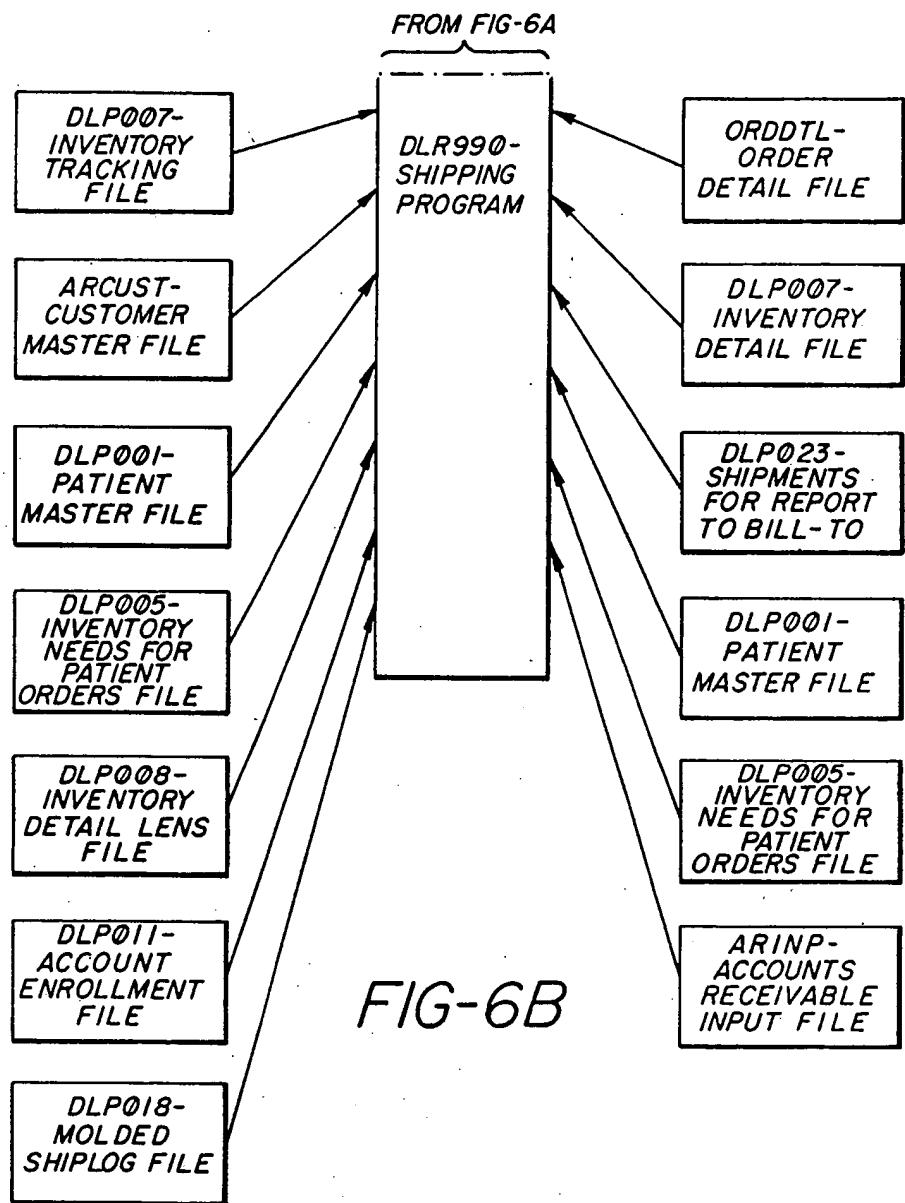
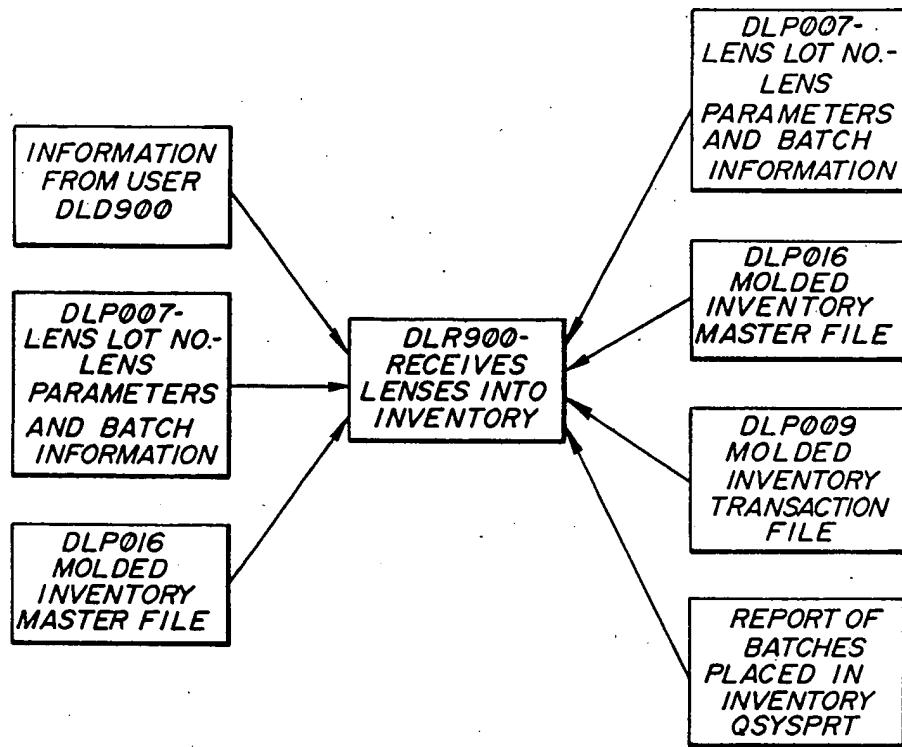
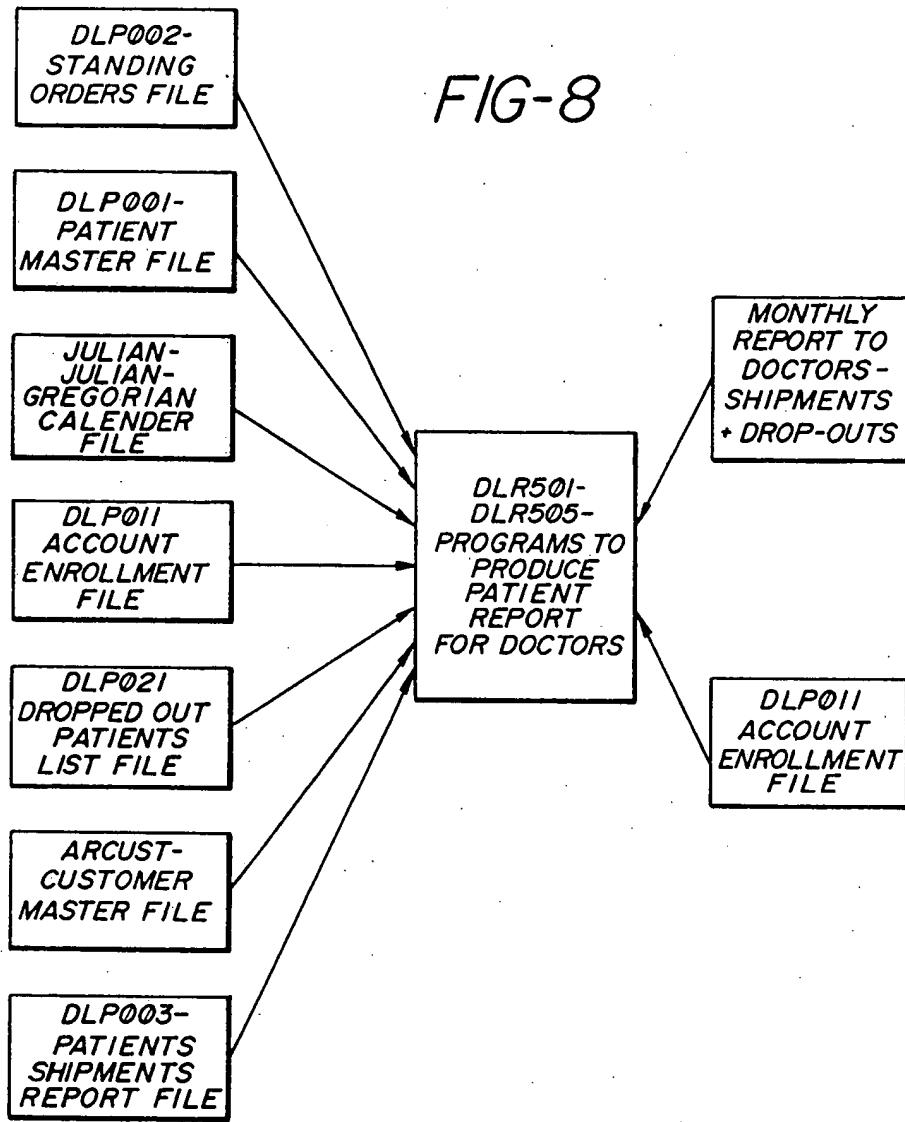


FIG-7



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FIG-8



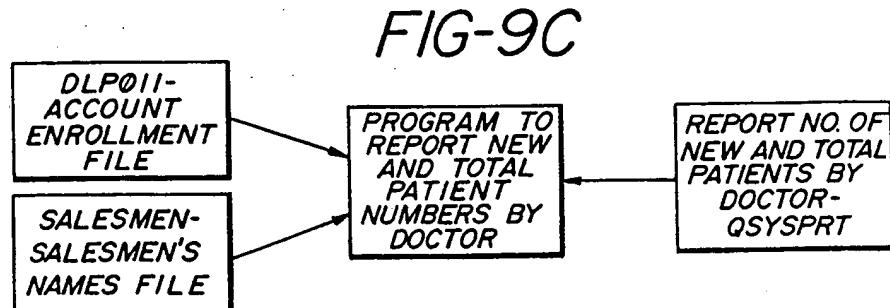
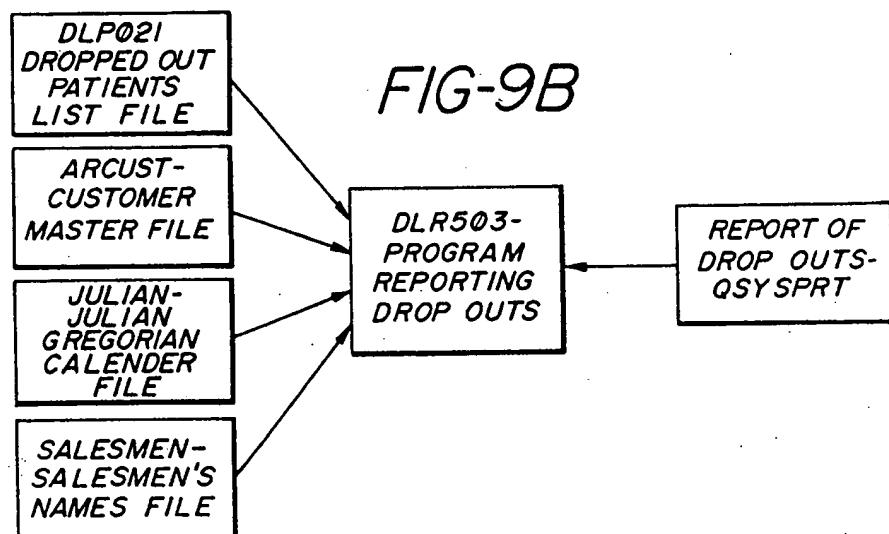
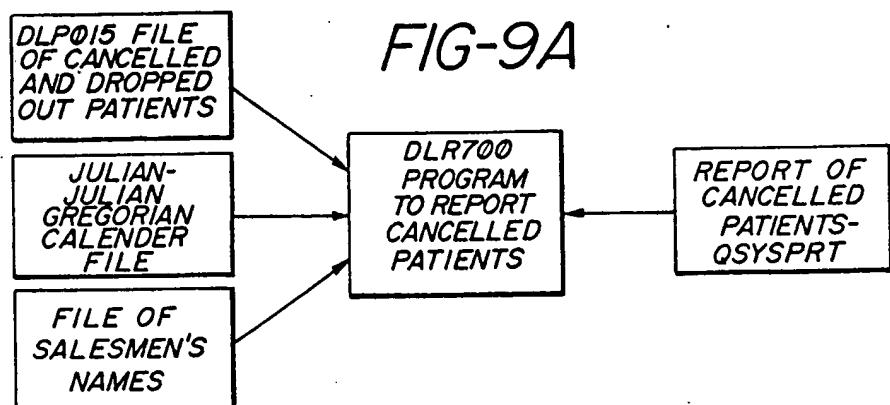


FIG-10A

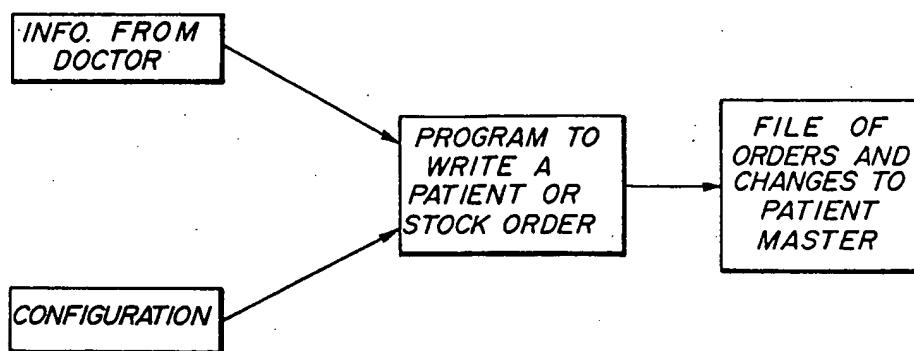


FIG-10B

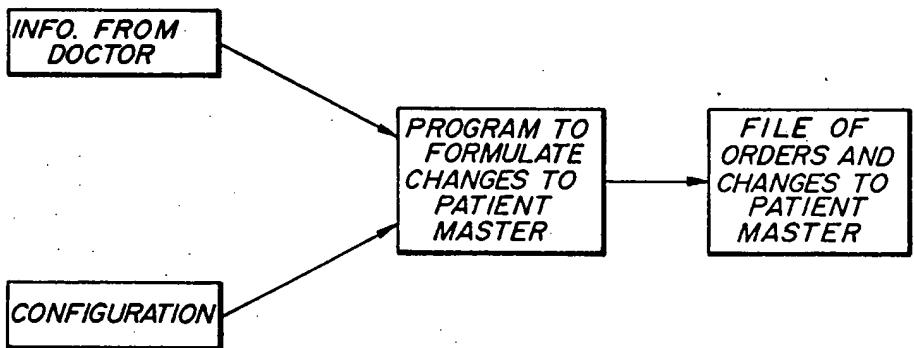


FIG-10C

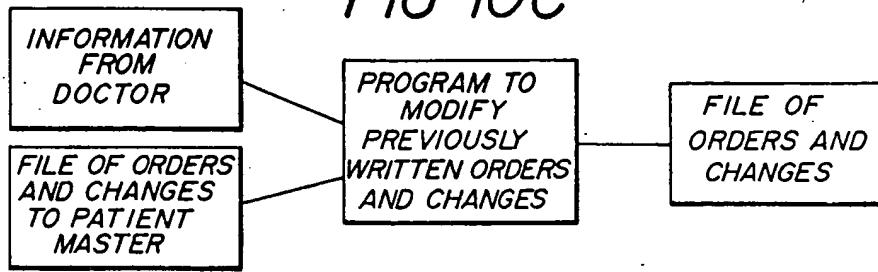


FIG-10D

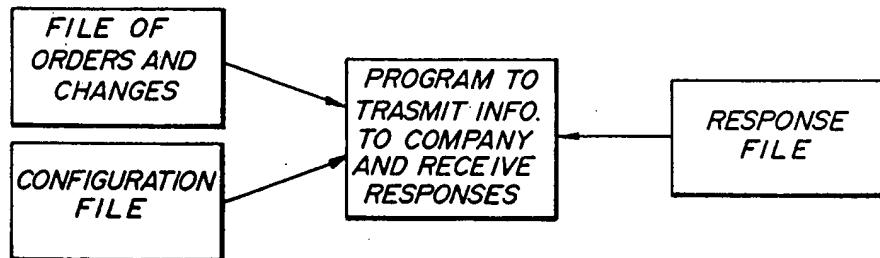
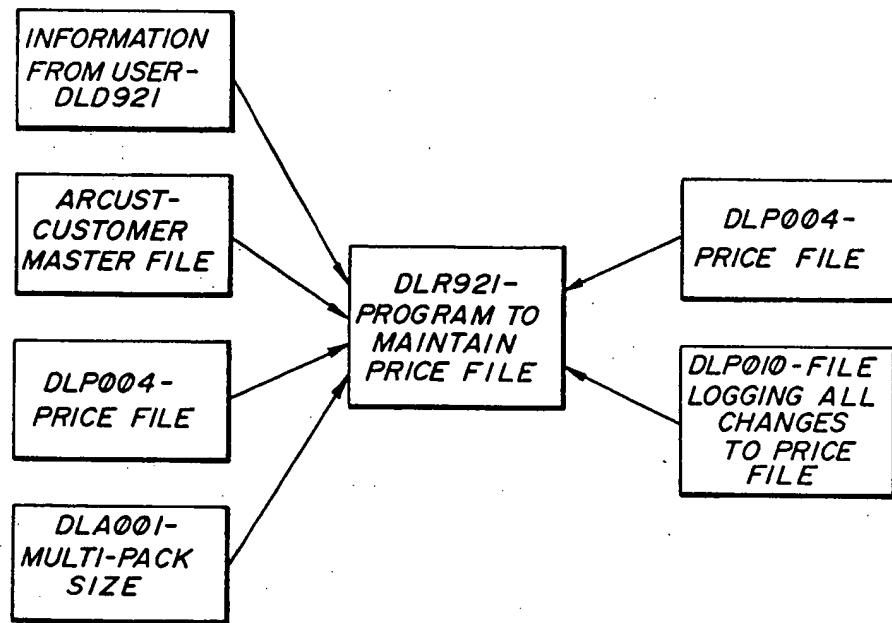


FIG-10E



FIG-11



**APPARATUS AND METHOD FOR SATISFYING
DISPOSABLE CONTACT LENS PRESCRIPTIONS**

FIELD OF THE INVENTION

This invention relates to effective provision of contact lenses, and more particularly to the accurate and ongoing fulfillment of disposable contact lens prescriptions.

**BACKGROUND OF THE INVENTION AND
PRIOR ART**

The supply of contact lenses poses many challenging and relatively unique requirements. Each lens, although not necessarily custom made to the eye of the patient, is characterized by a number of lens parameters each of which may vary through quite an extensive range of values. It is currently not unusual, for example, for companies in the business of production of lenses to maintain an inventory of as many as 25,000 different lathe cut toric and spherical lens types. Such companies typically maintain elaborate, labor intensive direct telephone ordering facilities, and even so, the precise requested lens is often not currently available and a doctor must choose from a number of approximately appropriate lenses which are available. Typically, the requested lenses are pulled from inventory and shipped through a convenient method, to be tried by the doctor with the patient.

The onset of disposable lenses promises to alleviate many of these problems, and yet presents still others which heretofore have not been faced. Such lenses, the production of which is taught by U.S. Pat. Nos. 4460489, 4565348, and 4495313 promise substantial reductions in the variety and total number of lens types in inventory, because of the inherent production accuracy and relatively improved predictability of lens parameters during the production process. Nevertheless, a complete inventory of spherical and toric lenses still could number in the thousands of inventory entries.

While as of the filing hereof, it is uncertain just what percentage of total contact lens users will convert to a disposable lens system, informed judgments indicate that the adoption will be widespread, and that formidable problems will be presented in supplying the needs of patients and attending physicians.

At any given time, an attending "eye care professional" (i.e. optometrist, ophthalmologist or optician) will have a panel of patients who have adopted disposable lens programs, each having a standing prescription for lenses which will include not only the standard lens parameters of base curve, magnification, etc. for each eye, but additionally the wear and replacement cycle for lenses. For example, patients may be directed to remove and replace lenses most likely on a one or two week cycle (although in the end, accumulated experience and judgment will be controlling, perhaps even extending wear cycles longer than two weeks, and in all events custom prescribed to the individual patient). Clearly, whether lenses are provided to the patient at a rate of two, six, or even ten or twenty at a time, it is highly desirable both to the eye care professional and to the patient that lenses be provided on an automatic refill basis, and that unnecessary or overly frequent visits be avoided. On the other hand, the relatively critical nature even of every day eye care demands that the eye care professional have ultimate control and discretion of the dispensing process, and hence that the eye care

professional be able to create the prescription in the first instance, and be able to update or vary the prescription on such basis as medical discretion may dictate. Throughout, the reasonable expectations of both patient

5 and eye care professional must be fulfilled respecting speedy, accurate, and satisfactory availability of lenses for purposes of initial patient fitting, ongoing lens supply, variation or alteration of prescription, and relatively minimal inventory burden upon the physician.

10 Correspondingly, although the ultimate goal of the system is patient and eye care professional satisfaction, the normal business requirements of accurate inventory, billings, product traceability, and overall minimum cost burdens must be satisfied.

15 It is accordingly an object of the present invention to provide methods and apparatus tailored specifically to the requirements of disposable contact lenses. It is an associated object that such systems and methods promptly and accurately allow attending eye care professionals to maintain close doctor-patient relationship, and provide initial and ongoing prescription fulfillment with minimal intrusion into that relationship.

20 It is a further object to provide methods and apparatus which automatically supply a patient's ongoing lens requirements, as directed by the eye care professional in accordance with a prescribed replacement schedule, and to maintain associated inventory and billing procedures.

25 Finally, but by no means least, it is an object that such goals be met in a cost-effective fashion, thereby to minimize the price burden both on eye care professionals and on patients, and to permit effective delivery of the functional advantages inherently attendant to disposable contact lenses.

SUMMARY OF THE INVENTION

In accordance with the principles of the present invention, eye care professionals are provided alternative ordering methods, in accordance with their needs, 40 which may vary from automated order entry through personal computers at the professional's office location, communicating through data links with central computers at the supplier, to direct telephone calls, or a variety of other forms of data communication which become economically feasible. At the central supplier's station, a variety of file storage means, which maintain appropriately configured files and in accordance with tailored system architecture, selectively process these files in accordance with the various contact lens operations, thereby effectively to manage the transaction, in some instances as individual transactions, and in others in a batch mode.

55 In a preferred embodiment, prescribing eye care professionals have the opportunity to phone orders directly, or through an on-site personal computer equipped with a disc drive and modem (e.g., an MS-DOS personal computer equipped with 256K main memory and a Hayes compatible modem). Orders from the on site personal computer are received at a properly adapted computer system at the central control site, where they are assembled and appropriately formatted for processing. Telephone orders are manually assembled and formatted for like processing. For a predetermined time, such as during normal business hours, orders are taken in by both routes, and are assembled into a batch. At some predetermined time, for example overnight, the day's orders are processed in a batch mode,

and appropriate individual pick/pack order forms are printed. Typically the next morning, the pick/pack forms are delivered to an inventory/distribution area, where during the next day or so, orders are picked, verified, packaged and shipped to the customer. At the time of receipt of the order and again at shipping, appropriate inventory file adjustments are made. As new orders come in, separate files are maintained respecting ongoing provision of lenses to the eye care professional and/or to the patient, and these standing orders are also integrated with the long term inventory needs and the daily order filling process in a batch mode on a regular predetermined basis. Provision is also made for changes in patient information and ordering, which are also automatically integrated into the process. Thus, an important feature of the invention is that a complete patient file is maintained; optionally but advantageously, eye care professionals who employ a personal computer with modem may be provided access to such information, for purposes of their own use. Similarly, the entire process facilitates simple but effective billings on a desired periodic basis, either directly to the patient, to or through the eye care professional, or through automatic credit procedures such as credit card charges.

DESCRIPTION OF THE DRAWINGS

FIG. 1 shows a block diagram schematic system embodying the principles of the present invention;

FIGS. 2A and 2B through 9, and 11, inclusive, illustrate file processing at a central computer location for 30

respective significant system procedures; and

FIGS. 10a through 10d illustrate significant processing procedures at the PC's in the doctor's office and interaction with that at the company location.

BEST MODE FOR CARRYING OUT THE INVENTION

Referring first to FIG. 1, there is shown in schematic form a system embodying the principles of the present invention. For the sake of consistency but without limitation, some apparatus will be characterized as being at the "doctor's" office and others at the "company's" office, to distinguish remote operations from central ones. It will be understood, however, that these terms are not used by way of limitation or in any way to characterize specifically where such apparatus may be located, or whether the prescribing party should be a ophthalmologist, optometrist, an optician, or a commercial entity involved in the business of contact lens prescriptions.

At the heart of the system is a central computer of substantial processing power, advantageously the system commercially available from International Business Machines under the trade designation of "IBM 38". This system is characterized by 16 ports, appropriate facility for local storage on disc drives or tape, and more than adequate capacity and speed for performing operations in accordance with the principles of the present invention. As shown in FIG. 1, the computer 101 is connected through associated data links to one or more local personal computers 102, a number of terminals 105, 106, and 107 dedicated to manual data input and output, appropriate printers 108 and 109 for hard copy output, and, as desired, additional apparatus for communication with other data systems. For example, shown simply as "third party connections" 122 are optionally featured interconnections, such a direct data communication network with cooperating banks or

financial institutions for purposes of billings, credit card transactions, or the like financial reports.

As shown in FIG. 1, orders may be received either from a personal computer 111 at the doctor's office, or by telephone 112 in conventional fashion. In a preferred embodiment, the doctor's personal computer will be an IBM PC unit, or one of the many commercially available compatibles which employ the MS-DOS operating system, having at least 256K memory and equipped with a modem (e.g. Hayes or Hayes-compatibles) for direct data communication with the company. As shown, a telephone switching system 104 at the company will receive the data, and employ an appropriate data terminal interface 103 such that the doctor's PC 111 may communicate with a like PC 102 at the company. Two-way data communication facilitates not only the ordering process, but also many features of the invention relating to patient record storage and sharing. For example, it may be that the doctor's initial ordering inquiry will be for a pair of lenses having respective characteristics which are either temporarily or unconditionally unavailable. Since many of the lens fitting parameters are in the doctor's judgment approximate and subject to considerable judgment in the first instance, the FIG. 1 system may optionally allow the PC 102 to draw appropriate inventory information from the computer 101, and convey to the doctor's PC 111 identification of a variety of lenses which are available and which are approximately equivalent to the lenses first requested. Clearly, however, accurate prescription filling will be the goal and the normal rule, rather than near approximation based on professional discretion as in the past. This interaction between PC's 102 and 111 will facilitate an effective, individual prescription by the doctor based upon all relevant lens parameters, including those which he believes critical, and those which he believes less exacting.

The PC to PC ordering system also permits, as desired, a batch mode ordering process. In such an instance, the doctor may accumulate in memory or on disk a number of orders over a predetermined period of time, for example a day or several days. On predetermined cue, these orders may either be transmitted in batch mode to the company, or, for example at nights when phone lines are relatively more available and rates are relatively lower, the company PC 102 may make inquiry of the doctor's PC, and down load the orders which have been accumulated in the recent agreed period of time.

Finally, doctors who use a PC may be permitted to avail themselves of the patient information which will be maintained by the company as an element of operation in accordance with the present invention. As will become apparent hereinafter, effective ongoing fulfillment of lens prescriptions will require detailed doctor and patient data, specific lens parameters currently prescribed for the patient, and, as desired, patient history of lens usage. If this feature is to be offered, it may be done so either on a real time or a periodic batch basis.

Also shown in FIG. 1 is the telephone 112, for the direct phone method of ordering, not dissimilar from that presently utilized by many companies. In such systems, the terminals 105 are occupied by a number of operators who through keyboard and CRT displays have relatively direct access to the inventory files of computer 101. Direct phone communication permits these operators either to confirm orders directly, or to

collaborate with the eye care professional based on perceived special needs.

The computer 101 is shown connected, through associated data links, to other terminals 106, having a primary inventory entry function, and others 107, having a primary distribution control function. Generally, although not essentially, the terminals 106 and 107 will be remote from the computer 101, being located at manufacturing and/or warehousing facilities of the company. In particular, the terminals 106 are provided so that the files of computer 101 may be appropriately updated as lenses are placed in inventory. Likewise, the distribution terminals 107 facilitate the removal of lenses from inventory of the computer 101 as orders are filled and shipped. Printers 109 operate under control of the computer 101 and/or the distribution terminals 107 to generate shipping labels 122 and associated documentation 120 in accordance with filled orders.

A transition in accordance with the preferred embodiment of the principles of the present invention between the order entry system 102 and 105, and the inventory entry and withdrawal 106 and 107 is a batch mode report and form procedure exemplified by printer 108, reports 120, and forms 121. In particular, it will be appreciated that considerations of accuracy, time, and cost will normally dictate a crossover between item and batch processing. This may perhaps be better appreciated when one considers that the total U.S. market, and hence manufacturing output, in non-disposable soft contact lenses may until recently have been in the range of twenty to twenty-five millions of lenses. Based upon conservative market projections, however, if only a small percentage (e.g. 10) of these patients are converted to disposable lenses on a two-week wear cycle, many more millions of disposable lenses will be required on an annual basis just by disposable lens users. Thus, the labor intensive, and relatively inexact item by item scheme of processing orders to final shipment cannot possibly work in this circumstance, and a batch mode conversion is desirable.

It is therefore contemplated, in preferred embodiments, that order entry continue on a relatively individual basis, thereby permitting doctors to be truly interactive in the order process, and to be placing orders based on lenses actually available, rather than upon a set of theoretical parameters which may not be met. In preferred embodiments of the present invention as described hereinafter, this item to batch conversion will be made after each business day, and will be accomplished through the generation of custom pick/pack forms 121, which will be physically conveyed to the distribution facilities, and used for the picking of lenses from inventory, the packing of lenses for shipment, and the generation of appropriate shipping labels. Beneficially, this conversion to batch mode will facilitate the integration of new orders, changed orders, and fulfillment of standing orders, without discrimination from the standpoint of order filling and distribution. As also shown in FIG. 1, the printers 108 are properly dedicated to the generation of reports 120, which may be simple hard copy verification records as well as billing statements and the like.

It is first beneficial to provide functional summaries of key processing routines which are routinely employed in preferred embodiments of the principles of the present invention. In the following, "molded" is used interchangeably with "disposable", in view of the preferred method of manufacture as indicated by the

patent citations hereinbefore. Clearly, however, the lenses may be made in any way desired by the manufacturer. The key programs are:

1. An order entry program - "DLRENT". This program receives all orders for products (orders for product made in different procedures may be different options on a menu). It will take stock orders, patient orders and start-up orders from doctors. When an order is generated, this program writes to two order files (the order header file and order detail file) and updates the customer master file and inventory master file.

If a doctor gives a patient order, an order for two introductory multi-packs is immediately generated (the sku's are the same as those of the patient's). The order for introductory lenses will have a comment associating the order with the patient last name, patient I.D. number, and patient order number.

The order for the first shipment of lenses to the patient will be generated or not depending on the given arrival date for the first shipment. If the arrival date for the first shipment is less than 14 calendar days from present, DLRENT must specify special handling. Generally, the patient's arrival date will be at least 2 working days from "now". Patient information is saved at this time. DLRENT will write to both the patient master file and the standing order file. If a patient's first shipment is to be sent out immediately, information is written to the two order files and the order number is recorded in the patient master file. For a patient order, the doctor either gives a complete address or just the patient name (the last name could be a series of numbers). If the patient's lenses are to go directly to the patient, a complete address is required.

DLRENT will also write into file the inventory needs for future patient shipments when patient orders are taken. Most desirably there will be needed no check of availability of lenses; the number of lenses on order will be increased when orders are actually generated.

This program will also be used to enter orders received in the mail. The difference is that if an order comes from the mail, the patient ID no. is entered; if order comes via telephone or PC, the patient ID no. is assigned by the computer. The patient ID number will typically have a check digit.

This program also employs credit security features. For example, if the doctor's orders are COD only because of credit problems, the doctor will not be allowed immediately to order lenses. If the doctor has any credit problems, stock and new patient orders will not be allowed (although usually, standing patient orders will be allowed). Patients needing lenses for one eye only will appear as needing lenses for both eyes, in this system; that is, the prescription for the right and left eyes will be the same. A one week wearing schedule will thus be entered as two weeks; otherwise, the patient will get twice as many lenses as really needed.

When a patient order is taken, the patient is added to the file which lists new patients (for a special mailing to welcome new patients). When a patient order is taken, the information about numbers of patients is changed in the account enrollment file. Start-up kits will be designated differently from other orders for lenses to allow tracking of orders.

2. A program to display or change information saved for patient; also used to cancel or re-enroll a patient - "DLR902".

Logically, a patient can be cancelled only if there is a standing order for that patient; a patient can be re-

enrolled only if there are no standing orders for that patient; and changes can be made only if there is a standing order. A customer service representative will be enabled to search for the patient data if provided the doctor's number and at least the first letter of the patient's last name. It is desirable, although not essential, to have ready access to the last order number and the last shipment date for a patient.

In accordance with the present invention, it will be possible to change wear schedule or shipment schedule. This may entail a charge, so the program may write a record in a file, "ARINP". The patient schedule will be set up for a complete year, the doctor will specify arrival date for first shipment, and the doctor will not receive introductory lenses as result of such change. Both the standing orders file and the file of inventory needs for future patient shipments will be updated accordingly. Also, the information about the number of patients in the account enrollment file will be changed. Wear and shipment schedules will normally not be allowed to change if doctor has a credit problem.

It is desirable for management purpose to track cancellations, and hence the reason for cancellation may be obtained. This program will place the reason and patient information in a cancelled/dropped-out patient file (the record may have a record code to distinguish a cancelled patient from others), remove any standing orders for the cancelled patient, update the file of inventory needs for future patient shipments, and update the information about the number of patients in the account enrollment file. This will entail a charge, so the program will write a record in file "ARINP".

When patient is re-enrolled or cancelled, a record of the total number of lenses the patient was shipped and the total number of shipments during a previous period will be in the patient history file.

When a patient is re-enrolled, an order for two introductory multi-packs for the doctor will be generated, and the patient master file, the standing order file, and the file of inventory needs for future patient shipments will be updated. The patient will also be removed from the file listing the dropped-out patients.

If the prescription or the first shipment arrival date is changed, the file of inventory needs for future patient shipments will be changed. If the change provides that shipments now go to patient, rather than to the doctor, it is important to have a complete address. The doctor gets no introductory lenses in this case.

3. A set of programs to generate orders for patients so they will receive their next shipments on time; also to identify drop-outs for the monthly patient management report -- "DLR001, DLR002, DLR003".

This program set will write to the orders files and update the customer master file and inventory master file on the basis of the standing orders file. As appropriate, the record in the standing orders file triggering the order will be deleted and written in a backup file and kept for a day or two. The number of days to look ahead will be in a data area, e.g. 5 days. Preferably, but not essentially, there will be no check of lens availability. If a doctor has a credit problem, orders will nevertheless be generated. If there are no more standing orders for that patient, the patient will be added to the list of drop-outs used for the monthly patient management report.

4. A program to generate a picking/packing document -- "DLR0015".

The invoice/order number will be preferably bar-coded.

For ease of handling, it is desirable to group different types of orders--stock orders requiring two or more pages, stock orders requiring one page, patient orders going directly to patient, and patient orders going to doctors. This program will be able to identify exceptions (overnight deliveries) so a packing slip can be generated early in the afternoon. It will be able to produce a packing document for a given order.

If the doctor has credit problems (is on hold or all orders are COD), packing documents for stock orders will not be generated (documents for patient orders will be). This program will not check inventory availability.

5. A program to use when actually shipping the lenses (shipping program) -- "DLR990".

15 This program checks that lenses having correct parameters have been picked; to do so, the program uses the file associating lot number with sku. The program records that the given lot number went to each particular doctor; to do so, it uses the molded inventory detail file. It also prints labels.

The label will preferably have a barcode e.g. employing an invoice number, a zip-code, and a check-digit.

The program will also write a record to the reports file so the monthly patient summary file can easily be generated. This program writes to the shiplog file and writes records to the file "ARINP" to reflect sales tax charges and special handling charges. It also keeps track of the multi-packs sold, itemized by parameter, 20 and it updates the patient master file with shipping date and order number. If the customer master file indicates it is appropriate to do so, a record will be written to a special invoices file so that "bill-to's" can receive a report at weeks end regarding the orders of their "ship-to's".

25 This program will also enable customer service representatives to cancel orders.

6. A program to generate at month-end a report for the doctors stating the patient orders shipped "this" month, the patient orders to be shipped in the next two months, the patients who will drop out "next" month, the patients who dropped out two months ago (if they have not been re-enrolled), and the patients who dropped out four months ago (if not re-enrolled) -- "DLR501".

30 This program will read the standing orders file for the next two months of shipments to identify patient shipments to be made in the next two months. It will read the reports file to get the patient shipments made this month, and will read the file listing the drop-outs to identify patients that should appear on the reports.

35 7. A program to report weekly to bill-to's the sales activity of their ship-to's, if requested by bill-to. Report will show weekly sales, month-to-date totals and year-to-date totals.

40 This program will obtain sales for the instant week from the bill-to-report file. It will also obtain month-to-date and year-to-date totals from account enrollment file.

45 8. A program to process credits issued by sales representatives.

46 This program is standard current procedure, and employs straightforward data entry and storage.

9. A program to protect safety stock (or maintain a future shipments file; it states how many lenses of each sku are needed for patients for each of the next 12 months) -- "DLR903".

The file of future inventory needs is loaded/updated by the molded order entry program and by the program for changes to the patient master.

This program also displays, for each sphere power, the number of lenses in inventory and the number of lenses on order.

10. A series of programs to generate periodic (e.g. monthly) management/sales reports. These are straightforward, and include:

a. Dropouts (this month, two months ago, four months ago) by doctor and territory -- "DLR503".

b. Patient cancellations (this 3-month period, last 3-month period, and last 12 months) by doctor and territory -- "DLR700".

c. New patients this month, total number of active 15 patients, and in each case a breakdown by shipping schedule and wearing cycle -- "DLR508".

11. Program or programs providing pricing for separate contract orders--"DLR921".

These programs will enter price contracts for a given account. They will report all price contracts, report contracts just entered, and report expired contracts. Each change, addition, and deletion of a contract are noted in a price log file, and the contents of this file are reported and then emptied each day.

12. Additional programs:

a. Program to remove patients from patient master file 6 or 8 months after end of their respective enrollment period.

b. Program to clear the month-to-date information in 30 the account enrollment file at the end of the month.

c. Program to clear the year-to-date information in the account enrollment file at the end of the year.

d. Program to allow customer service representatives to view orders already generated and learn the status of these orders, picked, shipped, etc. The representatives will also be able to confirm prescriptions as well as ship-to addresses.

13. A series of programs allowing entry of the number and sku of lenses in a batch as the lenses "are placed in inventory".

These involve a molded inventory detail file used to track shipments, some programs reporting placing lenses and adjusting lenses in inventory, and a program to allow inquiries regarding sphere power.

In partial summary, a number of separate programs provide the basis of detailed execution of the principles of the present invention. It is therefore apparent that in accordance with the present invention, file organization and file processing are important considerations and concerns. Following are definitions of key files, the processing of which also define procedural aspects of the present invention.

A. DLP001- This is the complete patient master file, which defines the variables associated with the patient. The patient is identified by name, last, first, and middle initial, address, and the prospective point of shipment, i.e. through the doctor or to the patient. The file contains enrollment data, both beginning and end. Relevant data for the lenses are provided, including base curve, diopter correction, and other relevant attributes.

The file also contains use and shipment data, including wearing interval, quantity per eye in each shipment, date of any changes from the doctor, and the like shipping information. This file is loaded by the program DLRENT, and is updated by the program for changing patient master information and the molded shipping program.

B. DLP002- This file is the standing orders file, is coordinated with the associated patient entry in DLP001, the patient master file, and provides the date of next shipment, the quantity to be shipped for each eye, and the price of the lenses to be shipped. This file is loaded by the molded order entry program and is updated by the program for changes to the patient master file.

C. DLP003- This file is the monthly patient report file, is coordinated to DLP001, and contains a report of shipments to the patient (by doctor number and patient I.D.). This file is written to during the current month when a patient order is shipped, and again at month's end when shipments for the next two months are identified.

D. DLP004- This is the price file, and provides pricing information.

E. DLP005- This file defines inventory needs for standing patient orders, and has variables for each lens, by base, diameter, and sphere, for a number of months in advance, for example twelve months. It is updated by the molded order entry program and the program changing the master file.

F. DLP006- This file contains a running history of accounts cancelled and re-enrolled, is coordinated with the patient master file, and defines enrollment and dropout dates, total enrollment shipments, and individual numbers of shipments. Provision is made for explanations of transactions.

G. DLP007- This file identifies batch numbers and thus functions as a master file. It also defines various parameters of the lenses, including the lens code number itself, and the parameters of base curve, sign and diopter power, axis, prism, diameter, water quantity, 35 quantity in inventory, packaging information, expiration date and the like variables. This file is loaded and changed by the program allowing the user to place lenses in inventory and take lenses out. Its main purpose is to define batch control identification. It is used by the shipping program to fetch lens specifications associated with the entered lens number.

H. DLP008- Molded Detail Lens File. This file tracks every multi-pack shipped, associating it with order number, bill-to, ship-to, etc. It is used for recall and product tracing purposes.

I. DLP009- This file, the molded lens transaction file, is maintained to track inventory transactions, and accordingly identifies manufacturing batches as they are placed in inventory.

As such, it is similar to file DLP007, except for allocation quantity, which is not present here, and date, time, and person placing lenses in inventory, which are not present in DLP007. It is a log of adjustments to inventory.

J. DLP010- This file is the price log file, and reflects alteration of the price file DLP004. As such, it is basically a price transaction file, and is used to report additions, deletions and changes to DLP004.

K. DLP011- This is the account enrollment file, and identifies accounts who have purchased a start-up kit and contains summary information regarding sales (including special handling charges and taxes) and patient enrollment (including patient wear cycle and shipping schedule). This file is initially loaded and updated by the order entry program. Patient information is changed by the program allowing changes to the patient master. Sales information is changed by programs producing the report to bill-to's about ship-to activity. This file is

used for monthly patient enrollment analysis and for a weekly bill-to sales report. It is also used by the order entry program to determine eligibility to place patient or stock orders.

L. ORDHDR and ORDDTL - This are both orders files, the former, or header file, containing all general data respecting orders and the latter, the order detail file, providing similar line item detail. As such, both files entail entries which totally characterize the order process, and hence have variables corresponding to substantially all relevant information also resident in the other, individual category files.

M. ARCUST - This is the customer (i.e. doctor) master file, and provides all requisite information concerning the doctor, including all relevant address and telephone information, and additionally, sales and marketing information including customer liability status, discount rates if any, charges and payments to date, discounts to be allowed, and so forth. Optionally but desirably, this file contains all such information on a periodic such as monthly basis extending a desired time in the past.

N. DLP018- This is the shipping log file, and contains information concerning the actual shipment of the order. As such, its primary purpose is to trigger accounts receivable processing of the other associated files when a shipment actually has been completed.

O. DLP015- Cancelled/dropped out patient file. This file contains all the information regarding cancelled and dropped out patients. It is loaded by the program allowing a patient changes and by the program removing dropped out patients from the master file.

P. DLP022- New Patients File. This file will enable the company to identify the recent new patients for various reasons, including a mailing to welcome them into the program.

Q. DLP021- Dropped-Out Patient File. This file is a list of patients with no standing orders (i.e. patients who have been sent all their lenses).

R. DLP023- Bill-To Report File. This file records shipments to ship-to's so that a weekly report to bill-to's can be generated. Information will be placed in this file on special request from bill-to.

S. DLP016- This is the inventory master file, and comprehensively defines all inventory which is available. It is used by the molded order entry and shipping programs and by the inventory inquiry programs.

T. ARINP - This is the accounts receivable input file. It identifies the various charges against the doctors.

As will be apparent from the foregoing list, while many aspects of file organization are subject to the discretion of the system architect, the relative contents of each are dictated by the overall system requirements and goals. Efficiency of processing, in accordance with the following, will also be facilitated by selection and organization of files as set forth above. Referring next in sequential fashion to FIGS. 2A through 11, classes or types of process in accordance with the principles of the present invention are defined. It will be appreciated that those of ordinary skill in the art, given the foregoing program descriptions and file and variable definitions, and the processes set forth in Figs. 2 through 11, inclusive, will in substantial measure be able, without undue experimentation, to fashion a working embodiment of the principles of the present invention.

FIG. 2 (representing FIGS. 2A and 2B when joined as shown) sets forth program DLRENT schematically, that is, the order entry procedure. To the left of the

"order entry" process box 201 are files which bear data useful for or needed in the process, and to the right are files which will receive the data so processed. Generally, the order entry process will require information received from the doctor, by mail, telephone, automated PC ordering, or the like. The file DLP011, indicating doctors who are enrolled and who are eligible so to order, is called to verify the acceptability of the order.

Assuming eligibility, the customer master file AR-CUST is accessed, which will provide full information concerning the doctor. In order actually to process an order, the inventory master file DLP016is called, to determine relative availability of the lenses desired to be prescribed by the doctor, and, finally, assuming that the order is to be entered, the price file DLP004is called. Based on the foregoing, if an order is to be entered, the succession of files to the right of FIGS. 2A and 2B must be updated. That is, given that an order is to be entered, the complete ongoing prescription must be provided for purposes of the doctor or customer, the patient, and the standing or ongoing procedures for the company to be able so to fill orders.

Accordingly, the customer master file ARCUST is updated to reflect new charges against the doctor's account. The inventory master file DLP016is decremented, so that the lenses needed for the immediate order are eliminated from consideration for subsequent orders, even though the order will not be filled until the time of batch mode processing, for example within a day or more of receipt of the order. In view of the unique nature of disposable lenses and prescription filling in accordance with the principles of the present invention, the standing orders file DLP002receives an entry, so that at predetermined times in the future, the patient's order will be called up and incrementally filled so that patient is insured an ongoing and ready supply of lenses in accordance with the prescribed wear schedule. Likewise, the future inventory needs file is augmented, so that ongoing production planning will be able to account for anticipated orders to be met in the standing orders file DLP002. A patient master file DLP001is created, thereby to establish a future reference for all aspects of the process respecting this patient, and the order files ORDHDR and ORDDTL are updated for immediate conversion to batch mode processing and prescription filling at the next available predetermined time. The balance of files shown in Figs. 2A and 2B are used in accordance with the foregoing, as will be evident to those of ordinary skill.

In summary, the order entry process set forth in FIGS. 2A and 2B consists of a verification that the prescribing doctor is eligible so to prescribe, a verification of the lenses ordered, and an indication of the ultimate price thereof. Completion of the order entry procedure triggers immediate and long-term order and inventory adjustments, and creation or updating of detail files respecting the doctor and the patient.

Referring next to FIG. 3, there is shown program DLR902, a sequence of processing used to maintain and to achieve alteration of the patient information. For example, in the ordering process set forth in FIGS. 2A and 2B, respective right and left lens parameters as well as lens wearing and disposable cycles are provided. Conventionally, patients' needs may change, and mechanism is provided for substantially automatic and ready alteration of the standing prescription, and appropriate adjustment of all requisite files. Accordingly, referring

to the left portion of FIG. 3, the change information is received from the doctor, again by telephone, mail, PC, or the like. As in the initial ordering process, the eligibility of the prescribing doctor must be checked, from file DLP011, and, once verified, the doctor or customer file ARJCUST is provided with all detailed customer information.

As in the initial ordering, the inventory master DLP016 and price DLP004 files are called up. Unlike the initial ordering stage, however, the patient information is maintained in a file on hand, DLP001, and this file is utilized for a base of information and for the actual change.

Thus, the rightmost portion of FIG. 3 indicates the files which must be updated or created. As in the initial ordering case, patient master DLP001 and doctor ARJCUST files must be updated, standing orders and future inventory needs must be adjusted, immediate orders ORDHDR and ORDDTL may or may not be required, depending upon the nature of the change, and the patient master file DLP001 must be adjusted. To account for the eventuality that the change is in fact a cancellation or withdrawal, an appropriate entry may be made in the cancelled patient file. Again, coordinated use and updating of the other files shown will be self evident to those of ordinary skill.

In summary, then, the patient change procedure set forth in FIG. 3 is similar to the initial order procedure set forth in FIGS. 2A and 2B, except that additional file changes may be entailed in the nature of patient history and cancelled patient file entries.

Referring to FIG. 4, there is shown a schematic view of the standing order processing, that is, programs DLR001- DLR003. As will be appreciated, advantageous conversion from serial processing to batch mode processing occurs on a frequent, periodic basis, for example at night after each regular business day. Since standing orders, in the form of the standing order file DLP002, are always available, substantial discretion is provided for entry of the standing orders into the overall supply process. Optionally, therefore, the standing order process may be integrated with inventory surplus and backorder conditions, so long as, in all events, patients receive prescription refills adequately in advance of depletion of their standing prescription. It will be appreciated from inspection of FIG. 4, that all file data attendant to any ordering (i.e. ARJCUST, DLP016, DLP001, DLP004, and DLP011) are to be invoked. The new element of the FIG. 4 procedure is the standing order file DLP002. It will be appreciated from FIG. 4 that all of the right-hand files, into which data is written, are the same as those set forth in FIGS. 2A and 2B, respecting the initial order entry procedure.

In summary, the standing order procedure is in form the same as an initial order procedure, except that the prescription information is drawn from the standing order file, and patient master file, rather than from an initial and perhaps discretionary order from the doctor. The key attribute of the standing order procedure in accordance with the principles of the present invention is that standing orders are filled on a substantially automatic basis based on the need for refilled prescriptions, subject to optional variation based on inventory conditions. In all events, standing order filling is coordinated with the serial to batch mode processing.

Referring next to FIG. 5, there is shown in schematic form program DLR015, the file processing used for the serial to batch conversion.

As set forth hereinbefore, this procedure advantageously generates a series of pick/pack slips, which physically represent not only the transition from serial to batch, but also the transition from pure processing to physical inventory handling and distribution. Accordingly, the ORD order files ORDHDR and ORDDTL generated in the processes set forth in FIGS. 2A and 2B, 3, and/or 4, are processed, and individual pick/pack slips are generated, for example at printers 108 of FIG. 1. Likewise, the ORD files are marked indicating the generation of pick/pack slips, and are ready for the subsequent processing. Advantageously but not essentially, the pick/pack slips 121 as generated in FIG. 5 will include computer bar codes, allowing the order filler personnel to use automated or semi-automated verification of order fulfillments, in accordance with known apparatus and procedures. Also optionally but advantageously, the pick/pack slips 121 may be segmented into different parts, with respective parts being detachable and collated in accordance with various aspects of the shipping process, thereby providing yet another self-verification aspect of systems in accordance with the present invention.

In FIG. 6, (representing FIGS. 6A and 6B when joined as shown) the shipping process of program DLR990 is outlined. Typically, this process is conducted during the work day which follows the processing of serial to batch, and the conversion to physical handling conversions as defined in accordance with FIG. 5. In FIGS. 6A and 6B, respectively associated processing steps are set forth, it being understood that the physical pick and pack process will be discharged in accordance with customary practices, the principal difference in accordance with the present invention simply being the ultimate flexibility in pack sizes and individual order quantities.

On the leftmost portion of FIGS. 6A and 6B, the order files ORDHDR and ORDDTR are again accessed, providing a verification of the lenses against the actual order. As set forth on the right, a match of the packing slip bar code and the individual packs' bar codes will result in a shipping label which contains a bar code of the zip code, and invoice/order number. Likewise, the files associated with a satisfied order must be so designated, including the inventory master DLP016, the patient master file DLP001, the molded inventory detail file, the order files ORDHDR and ORDDTL, and by no means insignificantly, the ship log file DLP018.

Thus, as will be seen from FIGS. 6A and 6B, and particularly the collection of files shown at the leftmost portion, all relevant data is available to establish comprehensive shipping, in particular including data relating to the patient, the required product, inventory and account information, and that information necessary to establish charges. Upon execution of the shipping program, then, the rightmost column sets forth the files which must be updated to indicate shipment, and the shipping labels themselves. It will be evident, based upon the foregoing detailed description of the shipping program and of the various files, that these files to be updated include, as will be appreciated, those relating to the patient master file and inventory needs, inventory and order master and detail files, and patient enrollment and accounts files. Likewise, data necessary for the patient management reports is provided, and, by way of hard copy, the shipping labels themselves.

In summary, upon execution of FIG. 6A and 6B, the physical process of lens shipping is enabled.

FIG. 7 shows a system flow chart for program DLR900, which receives lenses into inventory. Accordingly, on the leftmost column, the collected inventory information is provided, including file DLD900, information from the user, DLP007, lens parameters, lot number, and batch information, and DLP016, the molded inventory master files.

The execution of program DLR900, upon which the lenses are in fact entered into inventory, triggers the updating of files DLP007, DLP016, and DLP009, as well as a report of the batches placed in inventory.

FIG. 8 shows a system flowchart for programs DLR501 through DLR505, which produce patient summary report for doctors. On the leftmost column, the various patient data and order files are provided (DLP002, DLP001, DLP021, DLP003, and ARCUST), as well as account and calendar data. Upon execution of these programs, the report itself is designated, as well as the data change to DLP011, the account enrollment file. It is noted that FIG. 8 illustrates a monthly report to be produced for the doctors, and indeed this is foreseen as most convenient in the sense of balancing date of reasonable currency along with appropriate net total amount of changes. It will be evident, however, that the self-same procedures may optionally be employed at any desired frequency, and even may, if desired, be provided for doctor access on a real-time basis. Such real time interaction is not presently foreseen as optimally desirable.

FIGS. 9A through 9C set forth system flowcharts for generating three different types of sales reports deemed advantageous for the company. In particular, FIG. 9A shows a flowchart for execution of program DLR700, the program to report cancelled patients; FIG. 9B shows a flowchart for program DLR503, a program for reporting drop-outs; and FIG. 9C shows a flowchart for a program to report new and total patient numbers, itemized by doctor. Considering the flowcharts of FIGS. 9A through 9C together, it will be appreciated that these reports are particularly directed to management of the program from the standpoint of sales, and accordingly utilize data, on the left, and provide reports, on the right, appropriate to these desires.

Figs. 10A through 10E, inclusive, set forth individual system flowcharts for utilization by the PC ordering systems set forth in general terms hereinbefore.

In accordance with FIG. 10A, a program to write a patient or stock order, information from the doctor is utilized in conjunction with the configuration file to generate a file of orders and changes to the patient master. FIG. 10B represents a program to formulate changes in the patient master, which utilizes information of the same character and writes information into the same file, the only difference being the essential character of the information so processed. FIG. 10C likewise outlines a program to modify previously written orders and changes, and hence uses the input information from the doctor, the standing file of orders and changes to the patient master, and simply writes new data as the doctor may desire into the file of orders and changes to the patient master.

Having accumulated a file of orders and changes to the patient master in accordance with Figs. 10A, 10B, 65 and 10C, data is transmitted to the company, and responses are received from the company, in accordance with the flowchart shown in FIG. 10D. As will be seen,

the data previously developed, held in the file of orders and changes to the patient master, are combined with information from the configuration file and written at the company along with appropriate responses in the response file. Correspondingly, as set forth in FIG. 10E, a program allows the doctor to view responses from the company.

In summary, as will be appreciated from FIGS. 10A through 10E, the PC system of ordering allows the doctor, on a cumulative basis, to create a file of new orders and patient changes, to modify that file, to transmit it to the company, and to view responses from the company. It will be appreciated that PC's of the type recommended herein have substantial and elaborate computing power, and given the repository of data held at the company, the ease of data transmission through modems, and the day-to-day inclination of the designer of ordinary skill, many "ruffles and flourishes" may be added to augment the information generated by the doctor and/or communicated to the company, or vice-versa.

Turning finally to FIG. 11, there is shown a system flowchart for program DLR921, the program to maintain the price file. This program will be maintained with some security at the company by the company, and will allow price changes to be enacted when and as desired, thereby subsequently to provide accurate and up-to-date pricing information in accordance with the previously described functional programs for ordering, shipping, etc. As will be seen, therefore, the program DLR921 utilizes data from current files employing customer and price information, the new price information from the user, and product information, to produce an updated price file DLP004, and a record of all changes to the price file, in file DLP010.

In overview, therefore, it will be seen from the foregoing description that a best mode of practicing the invention will entail careful maintenance of numerous files, as outlined in general and detailed terms, execution on select ongoing and batch mode bases of certain programs as set forth, and generation of desired processing and shipping forms and labels, as well as sales, inventory, and the like reports. Numerous alternative embodiments, as well as modifications, will, based upon the foregoing description, be readily evident to those of ordinary skill without departing from the spirit or the scope of the principles of the present invention.

What is claimed is:

1. An integrated system for initial and ongoing supply of prescription disposable contact lenses comprising:
central computer means including plural file storage means said plural means being respectively dedicated to predetermined data files;
means, associated and communicating with said central computer means, for automated processing of prescription orders and prescription changes;
distributed computing means useful by respective prescribing parties for communicating with said means for automated processing; and
manually operable terminal means, associated and communicating with said central computer means, for manual processing of prescription orders and prescription changes;
said central computer means further including means operable on predetermined periodicity, for initiating prescription refills for standing orders, and means for automatically integrating prescription

changes with said prescription orders, and prescription refills.

2. A system as described in claim 1 and further comprising means, operable during inventory depletion associated with said integrated prescription orders and refills, for modifying data at select ones of said file storage means, whereby ongoing further orders and changes are directed based on cumulative actual current and directly forecast lens inventories.

3. A system as described in claim 1 wherein said plural file storage means comprise respective means for storing data respecting prescribing parties, means for storing data respecting patients and their lens prescriptions, means for storing data respecting standing refill orders, and means for storing data respecting lens inventories and pricing.

4. A system for provision of disposable contact lenses comprising:

a distributed network of order entry means; central means, communicating with said network, for receiving and recording prescription orders; first means for storing a file representing new orders gathered over a predetermined time; second means for storing a file representing standing orders to be refilled on a periodic basis; means, operable on a predetermined basis, for integrating said new orders and select ones of said standing orders; inventory means, responsive to said means for integrating, for filling said new orders and said select standing orders; wherein said distributed network and said central means include mutual facility to communicate prescription changes and prescription cancellations, said system further including means for automatically amending files stored in both said means for storing, based on communicated orders, changes and cancellations; further including third means for storing a file of data comprehensively characterizing prescription orders, including data identifying the patient, the prescribing eye care professional, the lens prescrip-

tion parameters including wear cycles, and select patient history;

wherein said central system includes means, responsive to said third means for storing, for communicating to said eye care professional select data representing patient listing and standing prescription data.

5. A system as described in claim 4 and further including fifth means for storing a file coordinated with said third means for storing, representing lens manufacturing data and batch number traceability of lenses shipped in accordance with prior prescriptions.

6. A system as described in claim 4 wherein said means for integrating comprises means for periodically generating a batch of prescriptions to be filled during the next predetermined period, accurately specifying lenses by parameters, quantities, and location of delivery, irrespective whether the prescription has recently been ordered or changed, and in the case of standing orders, on a timely basis before the last previous prescription has been exhausted in accordance with prescribed wear cycles.

7. A system as described in claim 6 and further including fourth means for storing a file of inventory information, including respective designation of lenses committed to standing orders and lenses not so committed.

8. A system as described in claim 4 and further including means associated with said central means for establishing billing information and for communicating said billing information to select third parties for prescriptions which have been filled.

9. A system as described in claim 8 wherein said means for establishing and communicating includes sixth means for storing a file of lens pricing data, and means operably associated with said third and said sixth means for conveying billing to a select entity.

10. A system as described in claim 9 wherein said select entity is the patient or the prescribing eye care professional, or a third party reimburer, or a bank or credit agency previously authorized to pay on behalf of the patient or professional.

* * * * *

RELATED PROCEEDINGS APPENDIX (37 C.F.R. §41.37(c)(1)(xi) heading)

1. A copy of the Notice of Panel Decision from Pre-Appeal Brief Review indicating that the Final rejection of Application No. 09/684,871 (PSTM0003/MRK) had been withdrawn, and prosecution of the application has been re-opened, is attached hereto.
2. A copy of the Notice of Panel Decision from Pre-Appeal Brief Review, indicating that Application No. 09/685,078 (PSTM0010/MRK) remains on appeal, is attached hereto.
3. A copy of the Notice of Panel Decision from Pre-Appeal Brief Review indicating that Application No. 09/680,654 (Attorney Docket No. PSTM0015/MRK) remains on appeal, is attached hereto.
4. A copy of the Notice of Panel Decision from Pre-Appeal Brief Review, indicating that Application No. 09/685,077 (Attorney Docket No. PSTM0020/MRK) remains on appeal, is attached hereto.
5. A copy of the Notice of Panel Decision from Pre-Appeal Brief Review indicating that Application No. 09/684,861 (Attorney Docket No. PSTM0024/MRK) remains on appeal, is attached hereto.



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/684,871	10/06/2000	David Allison Bennett	PSTM0003/MRK/STM	2829
29524	7590	06/07/2006	EXAMINER	
KHORSANDI PATENT LAW GROUP, A.L.C. 140 S. LAKE., SUITE 312 PASADENA, CA 91101-4710			WEBB, JAMISUB A	
			ART UNIT	PAPER NUMBER
			3629	

DATE MAILED: 06/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

-187-

Application Number: 	Application/Control No.	Appliant(s)/Patent under Reexamination
	09/684,871	BENNETT ET AL.
	Art Unit	
John G. Weiss	3629	
Document Code - AP.PRE.DEC		

Notice of Panel Decision from Pre-Appeal Brief Review



This is in response to the Pre-Appeal Brief Request for Review filed 5/2/06.

1. **Improper Request** – The Request is improper and a conference will not be held for the following reason(s):

- The Notice of Appeal has not been filed concurrent with the Pre-Appeal Brief Request.
- The request does not include reasons why a review is appropriate.
- A proposed amendment is included with the Pre-Appeal Brief request.
- Other: _____

The time period for filing a response continues to run from the receipt date of the Notice of Appeal or from the mail date of the last Office communication, if no Notice of Appeal has been received.

2. **Proceed to Board of Patent Appeals and Interferences** – A Pre-Appeal Brief conference has been held. The application remains under appeal because there is at least one actual issue for appeal. Applicant is required to submit an appeal brief in accordance with 37 CFR 41.37. The time period for filing an appeal brief will be reset to be one month from mailing this decision, or the balance of the two-month time period running from the receipt of the notice of appeal, whichever is greater. Further, the time period for filing of the appeal brief is extendible under 37 CFR 1.136 based upon the mail date of this decision or the receipt date of the notice of appeal, as applicable.

- The panel has determined the status of the claim(s) is as follows:
- Claim(s) allowed: _____.
- Claim(s) objected to: _____.
- Claim(s) rejected: _____.
- Claim(s) withdrawn from consideration: _____.

3. **Allowable application** – A conference has been held. The rejection is withdrawn and a Notice of Allowance will be mailed. Prosecution on the merits remains closed. No further action is required by applicant at this time.

4. **Reopen Prosecution** – A conference has been held. The rejection is withdrawn and a new Office action will be mailed. No further action is required by applicant at this time.

All participants:

(1) John G. Weiss

(2) Jami Webb

(3) Dean Nguyen

(4) _____



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/685,078	10/06/2000	David Allison Bennett	PSTM0010/MRK/STM	3150
29524	7590	07/20/2006	EXAMINER	
KHORSANDI PATENT LAW GROUP, A.L.C. 140 S. LAKE, SUITE 312 PASADENA, CA 91101-4710				WEBB, JAMISUE A
		ART UNIT		PAPER NUMBER
		3629		

DATE MAILED: 07/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Application Number:	Application/Control No.	Appl. Inventor(s)/Patent under Reexamination
	09/685,078	BENNETT ET AL.
	John G. Weiss	Art Unit 3629
Document Code - AP.PRE.DEC		

Notice of Panel Decision from Pre-Appeal Brief Review



This is in response to the Pre-Appeal Brief Request for Review filed 6/05/06.

1. **Improper Request** – The Request is improper and a conference will not be held for the following reason(s):

- The Notice of Appeal has not been filed concurrent with the Pre-Appeal Brief Request.
- The request does not include reasons why a review is appropriate.
- A proposed amendment is included with the Pre-Appeal Brief request.
- Other: _____

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The panel has determined the status of the claim(s) is as follows:

Claim(s) allowed: _____

Claim(s) objected to: _____

Claim(s) rejected: 1-6, 28-33, 49-52 and 58-65.

Claim(s) withdrawn from consideration: _____.

3. **Allowable application** – A conference has been held. The rejection is withdrawn and a Notice of Allowance will be mailed. Prosecution on the merits remains closed. No further action is required by applicant at this time.

4. **Reopen Prosecution** – A conference has been held. The rejection is withdrawn and a new Office action will be mailed. No further action is required by applicant at this time.

All participants:

(1) John G. Weiss

(2) Jamisue Webb

(3) Dean Nguyen

(4) _____



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/680,654	10/06/2000	David Allison Bennett	PSTM0015/MRK	9943
29524	7590	05/19/2006	EXAMINER	
KHORSANDI PATENT LAW GROUP, A.L.C. 140 S. LAKE., SUITE 312 PASADENA, CA 91101-4710			WEBB, JAMISUE A	
			ART UNIT	PAPER NUMBER
			3629	
DATE MAILED: 05/19/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

-191-

Application Numb	Application/Control No.	Ar Re.	ant(s)/Patent under mination
	09/680,654	BENNETT ET AL.	
	John G. Weiss	Art Unit	3629
Document Code - AP.PRE.DEC			

Notice of Panel Decision from Pre-Appeal Brief Review



This is in response to the Pre-Appeal Brief Request for Review filed 5/2/06.

1. **Improper Request** – The Request is improper and a conference will not be held for the following reason(s):

- The Notice of Appeal has not been filed concurrent with the Pre-Appeal Brief Request.
- The request does not include reasons why a review is appropriate.
- A proposed amendment is included with the Pre-Appeal Brief request.
- Other:

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The panel has determined the status of the claim(s) is as follows:
 Claim(s) allowed: _____.
 Claim(s) objected to: _____.
 Claim(s) rejected: 1-21,26-52 and 57-70.
 Claim(s) withdrawn from consideration: _____.

3. **Allowable application** – A conference has been held. The rejection is withdrawn and a Notice of Allowance will be mailed. Prosecution on the merits remains closed. No further action is required by applicant at this time.

4. **Reopen Prosecution** – A conference has been held. The rejection is withdrawn and a new Office action will be mailed. No further action is required by applicant at this time.

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(3) Jami Webb

(2) Dean Nguyen

(4) _____



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/685,077	10/06/2000	Paul Bilbin	PSTM0020/MRK/STM	3148
29524	7590	07/21/2006	EXAMINER	
KHORSANDI PATENT LAW GROUP, A.L.C. 140 S. LAKE., SUITE 312 PASADENA, CA 91101-4710			WEBB, JAMISUB A	
		ART UNIT	PAPER NUMBER	
		3629		

DATE MAILED: 07/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

- 193 -

Application Number 	Application/Control No.	Applicant(s)/Patent under Reexamination	
	09/685,077	BILIBIN ET AL. Art Unit 3629	
Document Code - AP.PRE.DEC			

Notice of Panel Decision from Pre-Appeal Brief Review



This is in response to the Pre-Appeal Brief Request for Review filed 6/15/06.

1. **Improper Request** – The Request is improper and a conference will not be held for the following reason(s):

- The Notice of Appeal has not been filed concurrent with the Pre-Appeal Brief Request.
- The request does not include reasons why a review is appropriate.
- A proposed amendment is included with the Pre-Appeal Brief request.
- Other:

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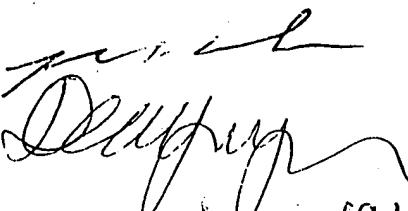
2. **Proceed to Board of Patent Appeals and Interferences** – A Pre-Appeal Brief conference has been held. The application remains under appeal because there is at least one actual issue for appeal. Applicant is required to submit an appeal brief in accordance with 37 CFR 41.37. The time period for filing an appeal brief will be reset to be one month from mailing this decision, or the balance of the two-month time period running from the receipt of the notice of appeal, whichever is greater. Further, the time period for filing of the appeal brief is extendible under 37 CFR 1.136 based upon the mail date of this decision or the receipt date of the notice of appeal, as applicable.

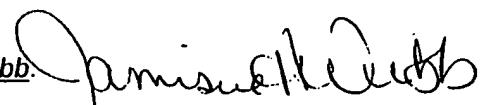
The panel has determined the status of the claim(s) is as follows:
 Claim(s) allowed: _____.
 Claim(s) objected to: _____.
 Claim(s) rejected: 1-7, 58-83.
 Claim(s) withdrawn from consideration: _____.

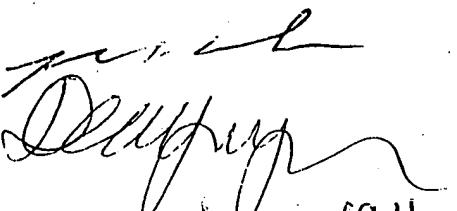
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All participants:

(1) John G. Weiss 

(3) Jamisue Webb 

(2) Dean Nguyen 

(4) _____

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/684,861	10/06/2000	Paul Bilibin	PSTM0024/MRK	2827
29524	7590	04/18/2006	EXAMINER	
KHORSANDI PATENT LAW GROUP, A.L.C. 140 S. LAKE, SUITE 312 PASADENA, CA 91101-4710			VAN DOREN, BETH	
		ART UNIT	PAPER NUMBER	
		3623		

DATE MAILED: 04/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

-195-

Application Number: 	Application/Control No.	Appl. Inventor(s)/Patent under Reexamination
	09/684,861	BILIBIN ET AL.
		Art Unit Beth Van Doren 3623

Document Code - AP.PRE.DEC

Notice of Panel Decision from Pre-Appeal Brief Review



This is in response to the Pre-Appeal Brief Request for Review filed 3/20/06.

1. **Improper Request** – The Request is improper and a conference will not be held for the following reason(s):

- The Notice of Appeal has not been filed concurrent with the Pre-Appeal Brief Request.
- The request does not include reasons why a review is appropriate.
- A proposed amendment is included with the Pre-Appeal Brief request.
- Other:

The time period for filing a response continues to run from the receipt date of the Notice of Appeal or from the mail date of the last Office communication, if no Notice of Appeal has been received.

2. **Proceed to Board of Patent Appeals and Interferences** – A Pre-Appeal Brief conference has been held. The application remains under appeal because there is at least one actual issue for appeal. Applicant is required to submit an appeal brief in accordance with 37 CFR 41.37. The time period for filing an appeal brief will be reset to be one month from mailing this decision, or the balance of the two-month time period running from the receipt of the notice of appeal, whichever is greater. Further, the time period for filing of the appeal brief is extendible under 37 CFR 1.136 based upon the mail date of this decision or the receipt date of the notice of appeal, as applicable.

The panel has determined the status of the claim(s) is as follows:

Claim(s) allowed: _____

Claim(s) objected to: _____

Claim(s) rejected: 1-13 & 15-17 & 19-23

Claim(s) withdrawn from consideration: _____

3. **Allowable application** – A conference has been held. The rejection is withdrawn and a Notice of Allowance will be mailed. Prosecution on the merits remains closed. No further action is required by applicant at this time.

4. **Reopen Prosecution** – A conference has been held. The rejection is withdrawn and a new Office action will be mailed. No further action is required by applicant at this time.

All participants:

(1) Beth Van Doren *bvd*

(3) Tariq Hafiz *THH*

(2) Susanna Diaz *SJD*

(4) _____